2004. 2

WALL MOUNTED TYPE

TECHNICAL Manual

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AIR CONDITIONER

SAMSUNG

Model Line-Up

1-1. Model Identification

1-2. Model Line-Up

Model Identification

1-1. Model Identification

Wall Mounted Type Air Conditioner

● **Standard type**

Model Code

Model Name

I	A	Q	V	09	A	1	M	E	□	/○○○
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	Buyer

Sub_Set	
Set	None
Indoor	I
Outdoor	X

① Set Initial	
Set	A
Indoor	A
Outdoor	U

② Mode	
H/P	Q
C/O	S

③ Tech	
General	
Tropical	T
INV+R22	V
R22+BLDC	D
Low Temp.	L
R407C	C
R410A	A
R410A+BLDC	B

④ Capacity	
Btu	
"30"	HP Mark

⑤ Design of Grille type	
S/S Stand	A
Smile	B
C&C	C
V-Lip	D
G Premium	P
G-Deluxe	S
G-Deluxe (K/L Grille)	K
Interior	I
GE	E
KLIMAT	Y

⑥ Used	
PD('00R)	1
PD_MR('00R)	2
MD('00R)	3
MD_MR('00R)	4
PD2	5
PD2_MR	6
MD2	7
MD2_MR	8
PD3	9
PD3_MR	0

⑥ Option (Outdoor Sash)	
Active	A
Active + MR	B
INV	C
C Specification+MR	D
Active2	E
G Mold	G

⑦ P/J Name	
V2	M
R	R
T2	T
Fashion	F
V3	C
B	B
G	G
Used	Q
Used	V
Used	A

⑧ Rating Voltage	
115V, 60Hz	A
220V, 60Hz	B
208~230V, 60Hz	C
200~220V, 50Hz	D
220~240V, 50Hz	E

⑨ Serial Version	
Basic	None
M/R	R
Specification change	⋮
⋮	⋮

Model Identification (cont.)

Wall Mounted Type Air Conditioner

● **Separated type of export model for EU in private**

Model Code

Model Name

S	H	09	Z	A	1	□	X	/○○○
①	②	③	④	⑤	⑥	⑦	⑧	⑨

① Products	
Separated type	S

② Mode	
H/P	H
C/O	C

③ Capacity
Btu

④ Tech	
Normal	Z
Tropical	T
INV+R22	V
R22+BLDC	D
Lower temperature model	L
R407C	C
R410A	A
R410A+BLDC	B

⑤ Design of Grille type	
S/S Standard	A
Smile	B
C&C	C
V-Lip	D
G Premium	P
G-Deluxe	S
G-Deluxe (K/L Grille)	K
Interior	I
Fashion	F
GE	E
KLIMAT	Y

⑥ Option (Outdoor unit sash)	
PD	1
PD_MR	2
MD	3
MD_MR	4
PD2	5
PD2_MR	6
MD2	7
MD2_MR	8
PD3	9
PD3_MR	0
Active	A
A Specification+MR	B
INV(VSash)	C
C Specification+MR	D
G Mold	G
Active2	E

⑦ Serial Version	
Basic	None
Specification change	A
⋮	⋮

⑧ Half finished products	
Indoor	None
Outdoor	X

⑨ Secondary Specification Division	
Model for Western Europe	None (EU)
Not used	XZE
Model for Australia	XSA

Model Identification (cont.)

Piping(Parts Box)

Model Code

Model Name

F	S	C	-	14	38	N	A
①	②	③	④	⑤	⑥	⑦	⑧

① Piping Division	
Initial	F

② Products		
Export	RAC	S
Domestic	RAC	R
Common	PAC	P
	Cassette	B
	Duct	D
	Ceiling	F
	DPM	M

③ Mode		
Export	H/P	H
	C/O	C
Domestic	H/P	H
	C/O	C
	Oil	G
	Multi	M

④ Division	
Export	None
Domestic	-

⑤ High pressure pipe Outer diameter	
1/4"	14
3/8"	38

⑥ Low pressure Outer diameter	
1/2"	12
3/4"	34
3/8"	38
1"	44
5/8"	58
7/8"	78
1 1/8"	98

⑦ Voltage type		
Export	None	
Domestic	Indoor	N
	Outdoor	X

⑧ Version	
Basic	A
New1	B
...	...
'01R Standard	Z

Model Line-Up

1-2. Model Line-Up (2004R)

Mode		Capacity	Indoor Unit	Outdoor Unit	Piping Unit
Heat Pump	Mold	7K	SH07APG	SH07APGX	FSH1438Z
		9K	SH09APG	SH09APGX	
		12K	SH12APG	SH12APGX	FSH1412Z
	Steel	7K	SH07AS2 AQ07S2GE	SH07AS2X UQ07S2GE	FSH1438Z
		9K	SH09AS2 AQ09S2GB AQ09S2GE	SH09AS2X UQ09S2GB UQ09S2GE	
		12K	SH12AS4 AQ12S4GB AQ12S4GE	SH12AS4X UQ12S4GB UQ12S4GE	FSH1412Z
Cooling Only	Mold	7K	SC07APG	SC07APGX	FSC1438Z
		9K	SC09APG	SC09APGX	
		12K	SC12APG	SC12APGX	FSC1412Z
	Steel	7K	SC07AS2 AS07S2GE	SC07AS2X US07S2GE	FSC1438Z
		9K	SC09AS2 AS09S2GB AS09S2GE	SC09AS2X US09S2GB US09S2GE	
		12K	SC12AS4 AS12S4GB AS12S4GE	SC12AS4X US12S4GB US12S4GE	FSC1412Z

Specifications

2-1. Table

Table

2-1. Table

Item \ Model					SH07APG		SH09APG		SH12APG	
					Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	Indoor unit	Outdoor unit
Type					Wall-mounted		Wall-mounted		Wall-mounted	
Performance	Cooling			kW	2.47		2.70		3.50	
	Heating			kW	2.46		2.90		3.80	
	Dehumidifying			ℓ/h	0.9		1.4		1.9	
	Air Volume			m^3/min	6.5	24	7.0	24	8.2	24
	Noise			dB	37	50	40	51	43	53
	Energy Efficiency Ratio	Cooling		W/W	3.21		3.21		3.21	
		Heating		W/W	3.42		3.41		3.22	
	Power			V-Hz	1-220 / 240-50		1-220 / 240-50		1-220 / 240-50	
Power	Power Consumption	Cooling		W	770		840		1,090	
		Heating		W	720		850		1,180	
	Operating Current	Cooling		A	3.4		3.7		5.0	
		Heating		A	3.3		3.7		5.2	
	Power Factor	Cooling		%	98.5		98.7		94.8	
		Heating		%	94.9		99.9		98.7	
	Starting Current			A	18.0		21.0		28.0	
	Power Cord	Length		m	-		-		-	
		Number of Core Wire			-		-		-	
		Capacity		A	250V-10 / 16A		250V-10 / 16A		250V-10 / 16A	
Size	Outer Dimension	W x H x D		mm	795 x 258 x 179	695 x 530 x 280	795 x 258 x 179	695 x 530 x 280	890 x 285 x 179	695 x 530 x 280
				inch	31.3 x 10.2 x 7.0	27.4 x 20.9 x 11.0	31.3 x 10.2 x 7.0	27.4 x 20.9 x 11.0	35.0 x 11.2 x 7.0	27.4 x 20.9 x 11.0
	Weight			kg	7.5	26.5	7.5	27.0	8.5	34.0
	Refrigerant Pipe	Liquid		mm x L(m)	ø6.35 x 7.5		ø6.35 x 7.5		ø6.35 x 7.5	
		GAS		mm x L(m)	ø9.52 x 7.5		ø9.52 x 7.5		ø12.7 x 7.5	
	Drain Hose			D x L(mm)	ø18 x 2,000		ø18 x 2,000		ø18 x 2,000	
	Compressor	Type			Rotary		Rotary		Rotary	
		Motor	Type		-	-	-	-	-	-
			Rated Output		-	-	-	-	-	-
	Blower	Type			Cross-fan	Propeller	Cross-fan	Propeller	Cross-fan	Propeller
		Motor	Type		steel	steel	steel	steel	steel	steel
			Rated Output	W	11	25	11	25	15	25
Heat Exchanger					2ROW 10STEP	1ROW 24STEP	2ROW 10STEP	1ROW 24STEP	2ROW 12STEP	2ROW 24STEP
Refrigerant Control Unit					CAPILLARY TUBE		CAPILLARY TUBE		CAPILLARY TUBE	
Freezer Oil Capacity				cc	350		280		500	
Refrigerant to Change(R410A)				g	650		590		880	
Protection Device(OLP)					MRA99901-9201		RBC12054-12500		RBC12128-12500	
Cooling Test Condition					INDOOR UNIT : DB27˚C WB19˚C OUTDOOR UNIT : DB35˚C WB24˚C					
Maximum Operation Condition					INDOOR UNIT : DB32˚C WB23˚C OUTDOOR UNIT : DB43˚C WB26˚C					

Table (cont.)

Table(cont.)

Item				Model	SH07AS2		SH09AS2		SH12AS4	
					Indoor unit	Outdoor unit	Indoor unit	Outdoor unit	Indoor unit	Outdoor unit
Type					Wall-mounted		Wall-mounted		Wall-mounted	
Performance	Cooling			kW	2.30		2.70		3.50	
	Heating				2.40		2.90		3.80	
	Dehumidifying			ℓ/h	0.9		1.4		1.9	
	Air Volume			m^3/min	6.2	22	6.8	22	8.2	24
	Noise			dB	36	50	39	51	43	53
	Energy Efficiency Ratio	Cooling		W/W	2.95		2.87		2.82	
		Heating			3.24		3.22		3.22	
	Power			V-Hz	1-220 / 240-50		1-220 / 240-50		1-220 / 240-50	
Power	Power Consumption	Cooling		W	780		940		1,240	
		Heating			740		900		1,180	
	Operating Current	Cooling		A	3.5		4.2		5.4	
		Heating			3.3		4.0		5.2	
	Power Factor	Cooling		%	96.9		97.3		99.8	
		Heating			97.5		97.8		98.7	
	Starting Current			A	17.0		21.0		32.0	
	Power Cord	Length		m	-		-		-	
		Number of Core Wire			-		-		-	
		Capacity		A	250V-10 / 16A		250V-10 / 16A		250V-10 / 16A	
Size	Outer Dimension	W x H x D		mm	795x258x179	660x495x235	795x258x179	660x495x235	890x285x179	720x530x260
				inch	31.3x10.2x7.0	26.0x19.5x9.3	31.3x10.2x7.0	26.0x19.5x9.3	35.0x11.2x7.0	28.3x20.9x10.2
	Weight			kg	7.5	26.0	7.5	26.5	8.5	33.0
	Refrigerant Pipe	Liquid		mm x L(m)	ø6.35 x 7.5		ø6.35 x 7.5		ø6.35 x 7.5	
		GAS		mm x L(m)	ø9.52 x 7.5		ø9.52 x 7.5		ø12.7 x 7.5	
	Drain Hose			D x L(mm)	ø18 x 2,000		ø18 x 2,000		ø18 x 2,000	
	Compressor	Type			Rotary		Rotary		Rotary	
		Motor	Type		-	-	-	-	-	-
			Rated Output		-	-	-	-	-	-
	Blower	Type			Cross-flow	Propeller	Cross-flow	Propeller	Cross-flow	Propeller
		Motor	Type		steel	steel	steel	steel	steel	steel
			Rated Output	W	11	20	11	20	15	25
Heat Exchanger					2ROW 10STEP	1ROW 22STEP	2ROW 10STEP	1ROW 22STEP	2ROW 12STEP	1ROW 24STEP
Refrigerant Control Unit					CAPILLARY TUBE		CAPILLARY TUBE		CAPILLARY TUBE	
Freezer Oil Capacity				cc	350		280		500	
Refrigerant to Change(R410A)				g	600		500		750	
Protection Device(OLP)					MRA99901-9201		RBC12131-12500		RBC12128-12500	
Cooling Test Condition					INDOOR UNIT : DB27˚C WB19˚C		OUTDOOR UNIT : DB35˚C WB24˚C			
Maximum Operation Condition					INDOOR UNIT : DB32˚C WB23˚C		OUTDOOR UNIT : DB43˚C WB26˚C			

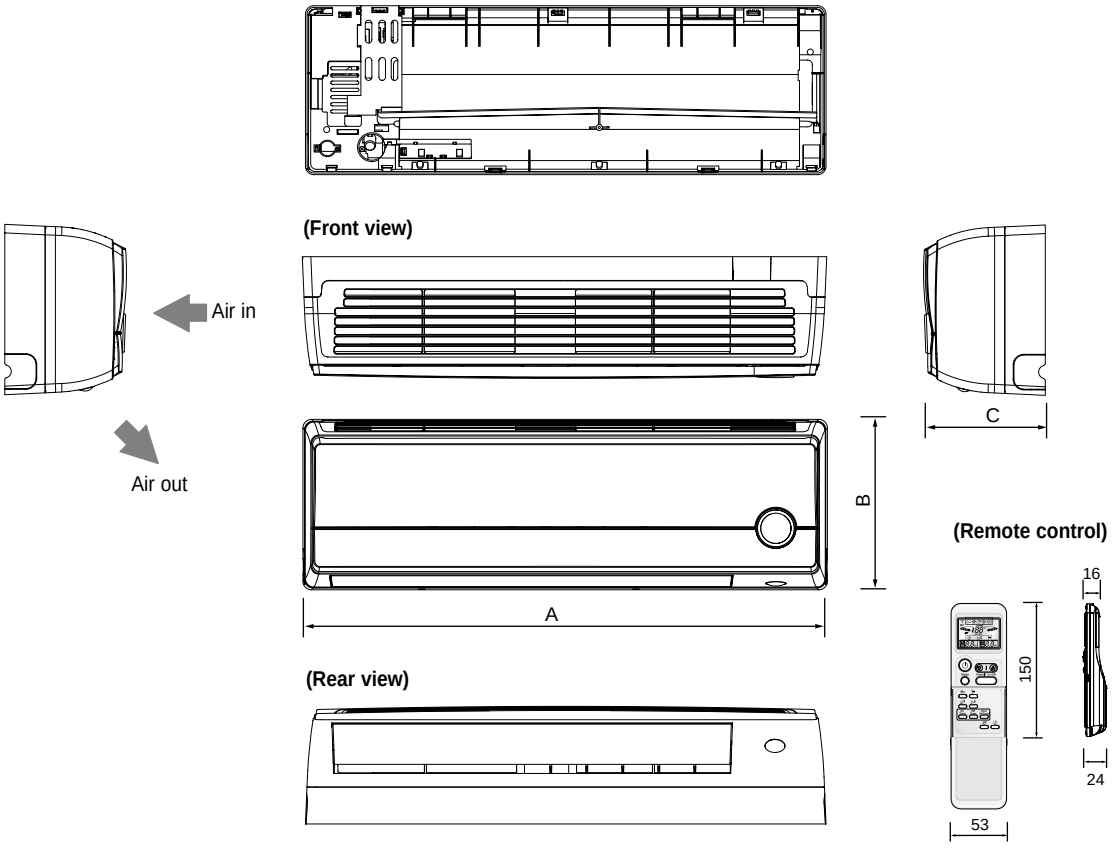
Outline & Dimension

3-1. Indoor Unit

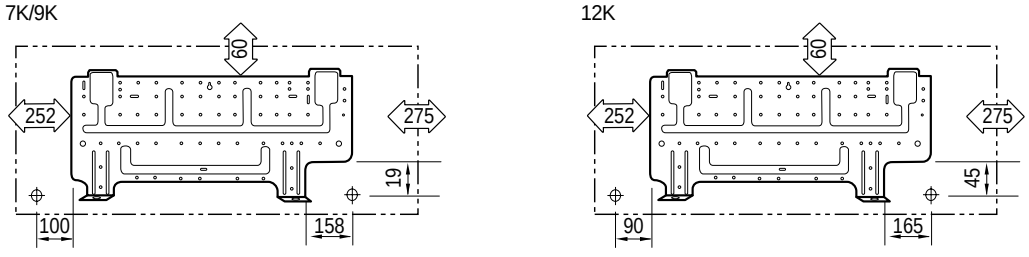
3-2. Outdoor Unit

Indoor Unit

3-1. Indoor Unit(PREMIUM)



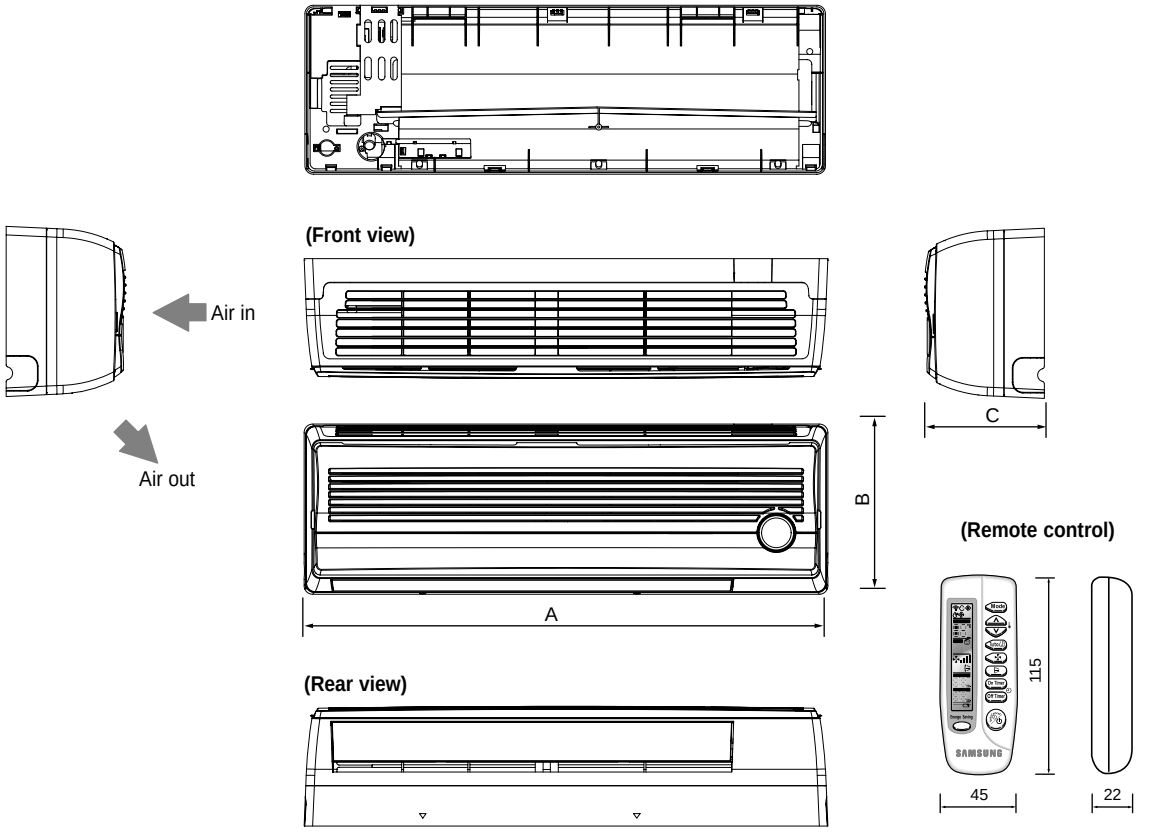
(Installation plate)



Type	A	B	C
7K / 9K	795	258	179
12K	890	285	179

Indoor Unit (cont.)

Indoor Unit(DELUXE)



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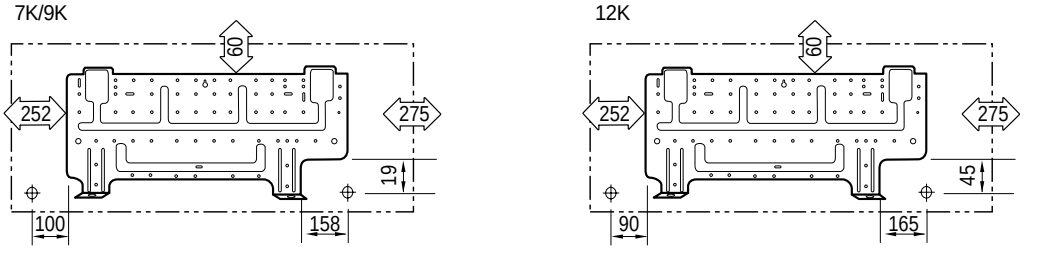


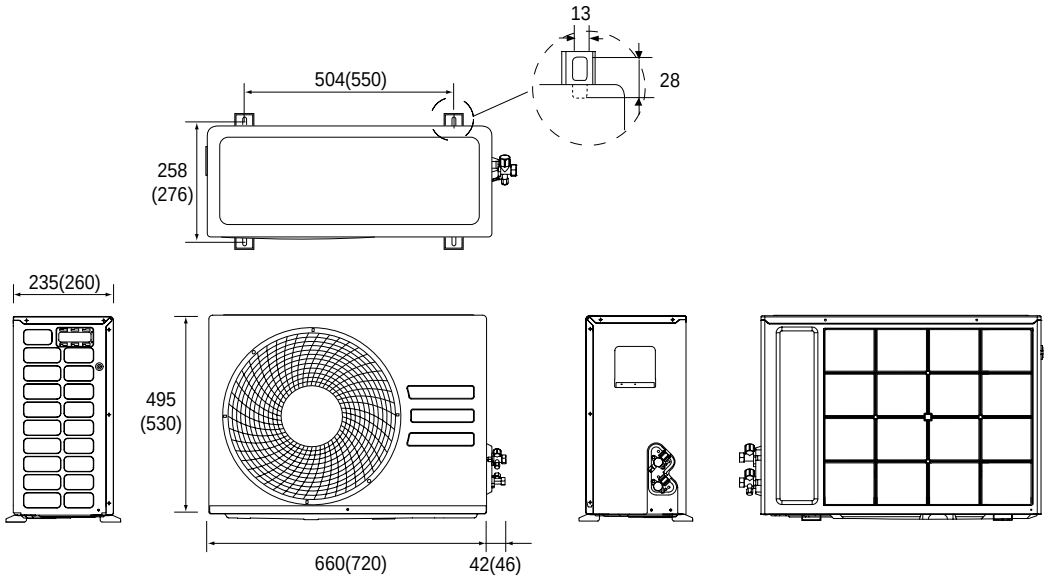
Type	A	B	C
7K / 9K	795	258	179
12K	890	285	179

Outdoor Unit

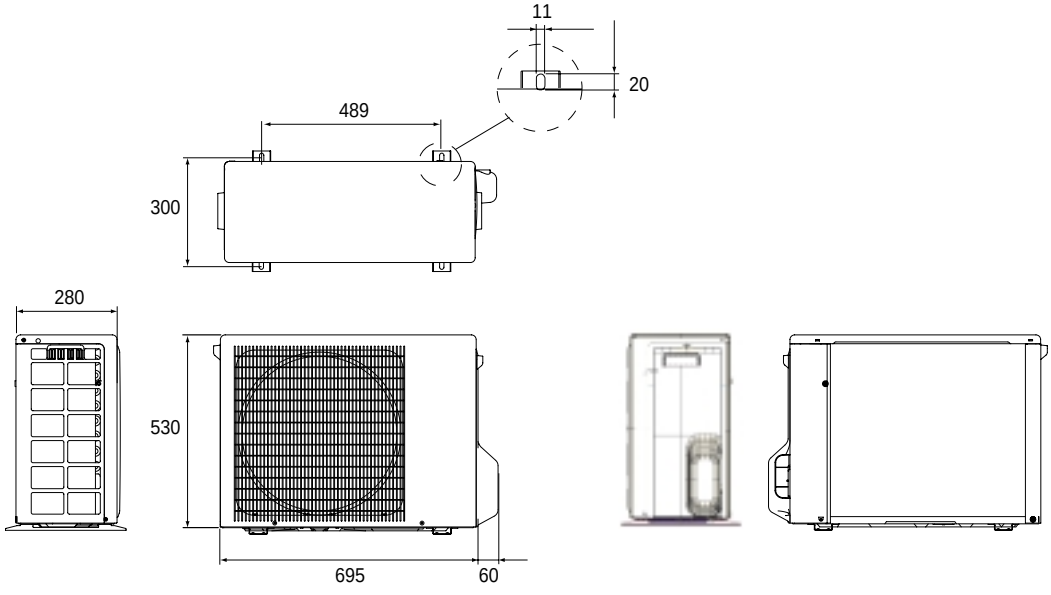
3-2. Outdoor Unit

■ 7K / 9K / 12K (STEEL)

✳ The figure in parentheses means 12K.



■ 7K / 9K / 12K (MOLD)



MEMO

Performance Data

4-1. Performance Data

Performance Data

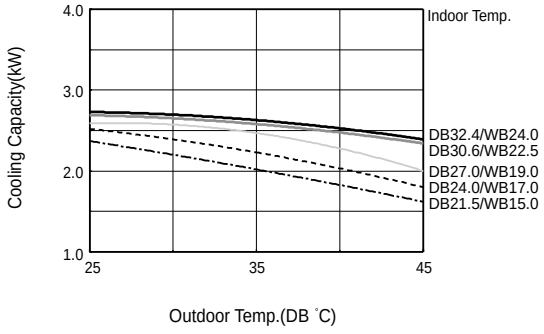
4-1. Performance Data

4-1-1. Capacity

● 7,000BTU

■ Capacity Distribution

<Cooling>



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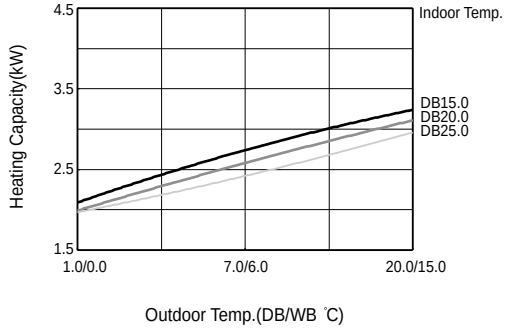
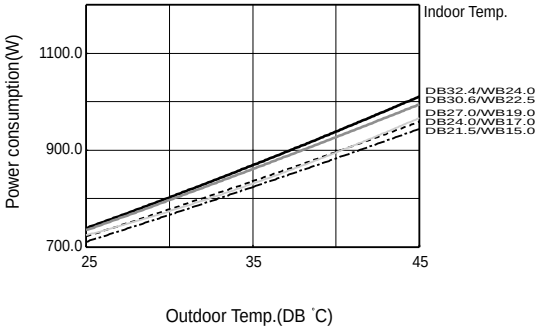


■ Power consumption Distribution

<Cooling>



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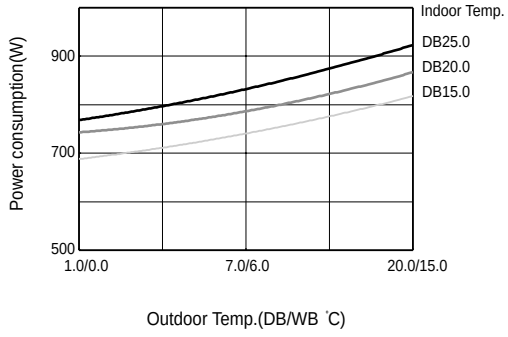


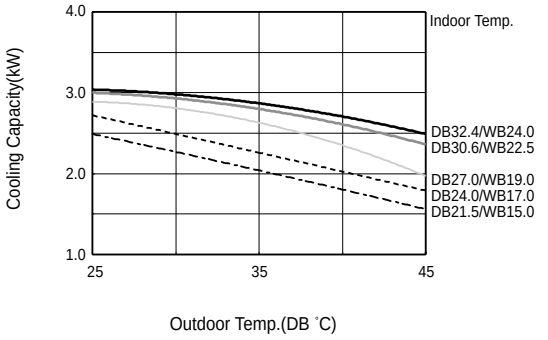
Performance Data (cont.)

Capacity (cont.)

● 9,000BTU

■ Capacity Distribution

<Cooling>



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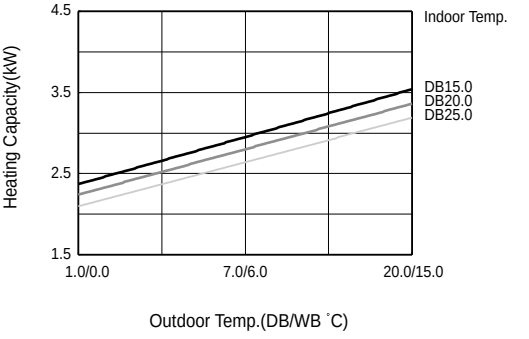

■ Power consumption Distribution

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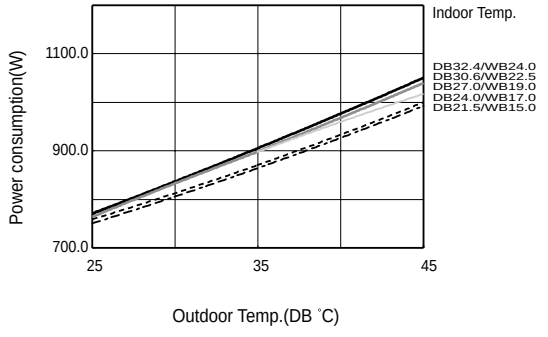

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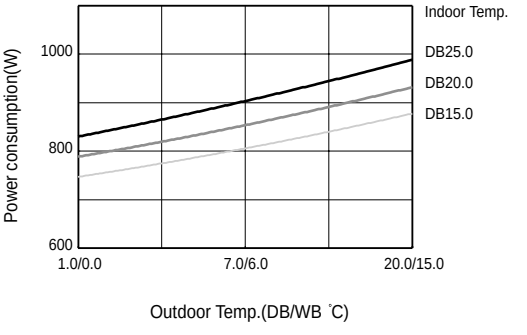


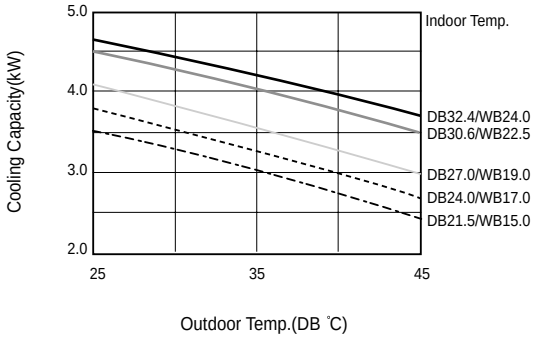
Performance Data (cont.)

Capacity (cont.)

● 12,000BTU

■ Capacity Distribution

<Cooling>



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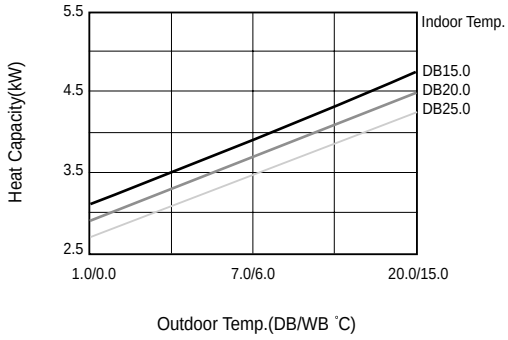
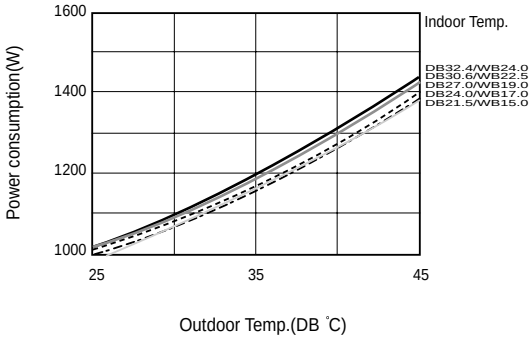


■ Power consumption Distribution

<Cooling>



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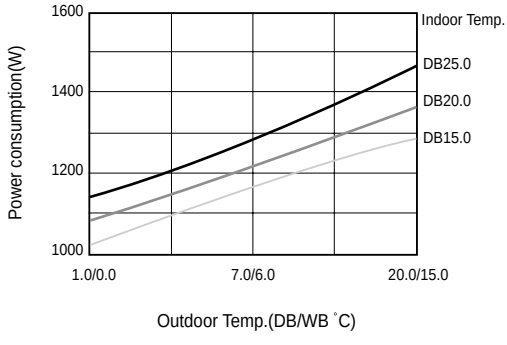
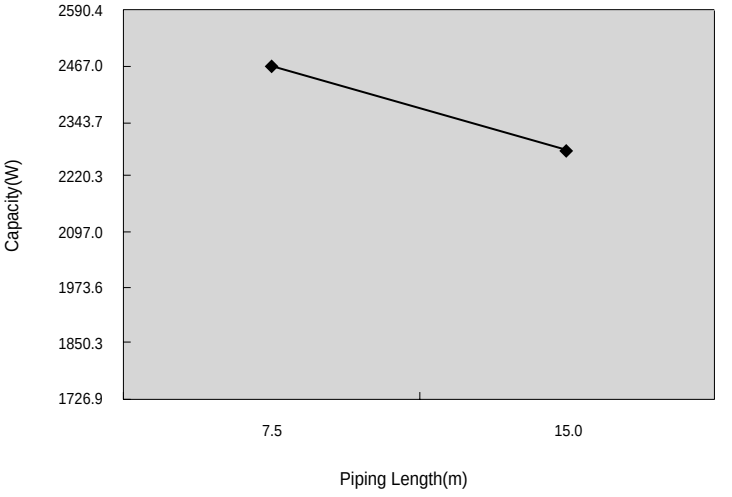
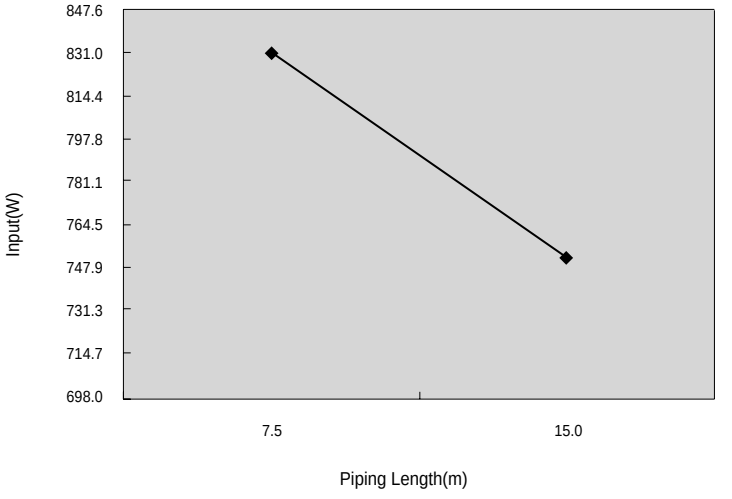


Performance Data (cont.)

4-1-2. Cooling Capacity Correction Factors

● **7,000BTU**

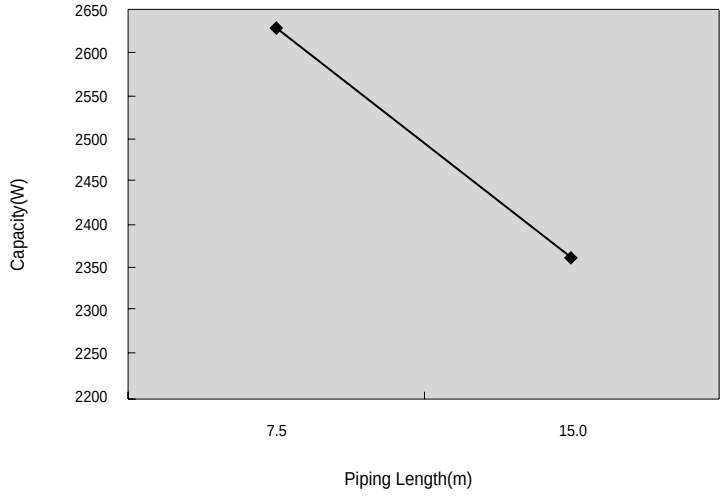


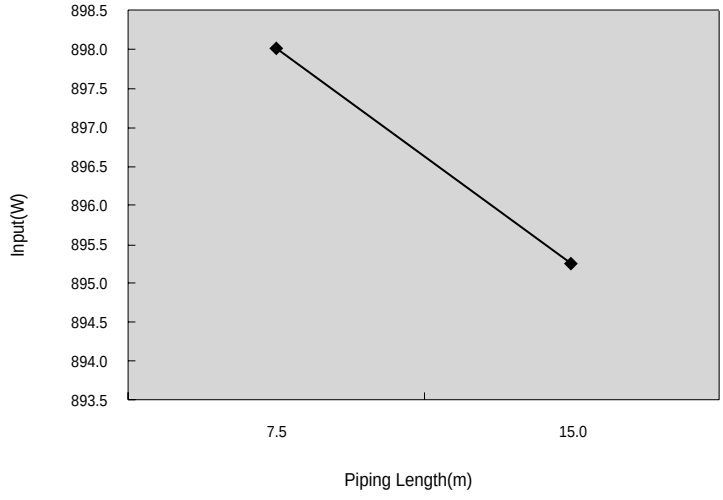


Performance Data (cont.)

Cooling Capacity Correction Factors(cont.)

● **9,000BTU**

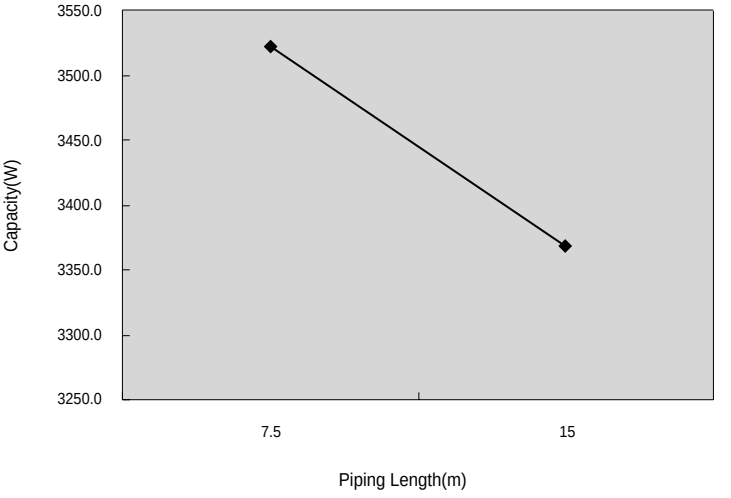


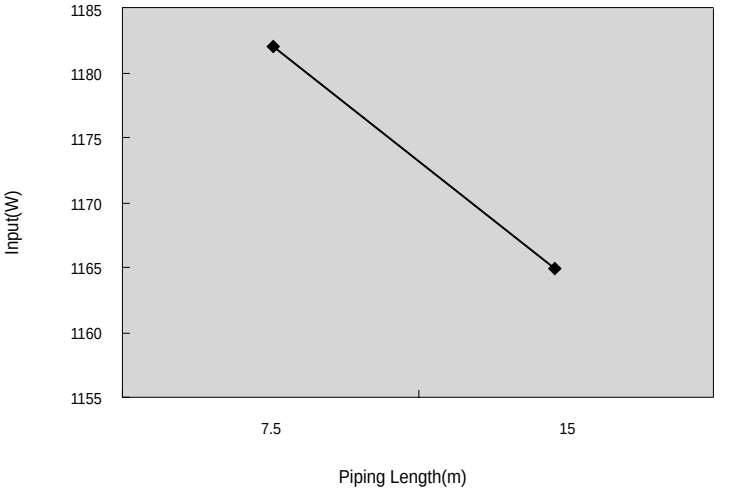


Performance Data (cont.)

Cooling Capacity Correction Factors(cont.)

● **12,000BTU**



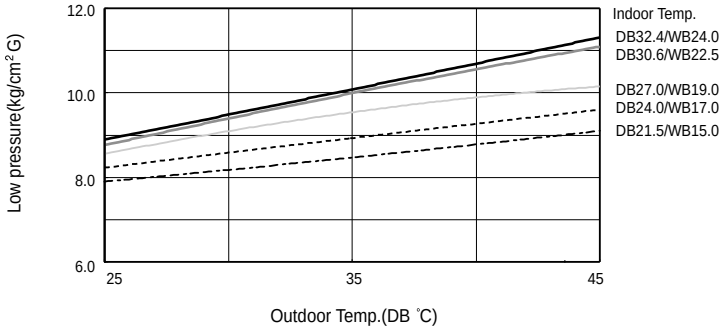


✻Refrigerant must be added if the piping length is more than 7.5metres.
In case of 7K and 9K models, 20g of refrigerant 'R410A' must be added for each extra metre.
In case of 12K model, 30g of refrigerant 'R410A' must be added for each extra metre.

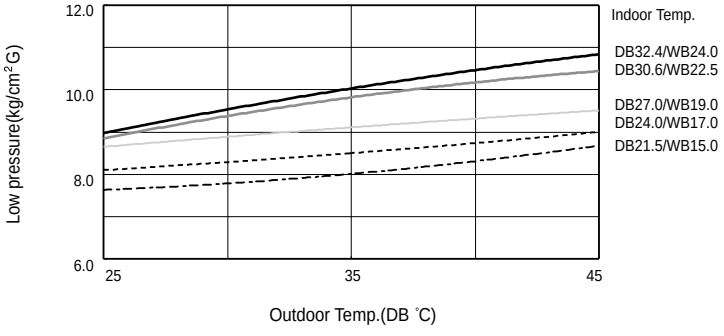
Performance Data (cont.)

4-1-3. Low Pressure Distribution(Cooling Mode)

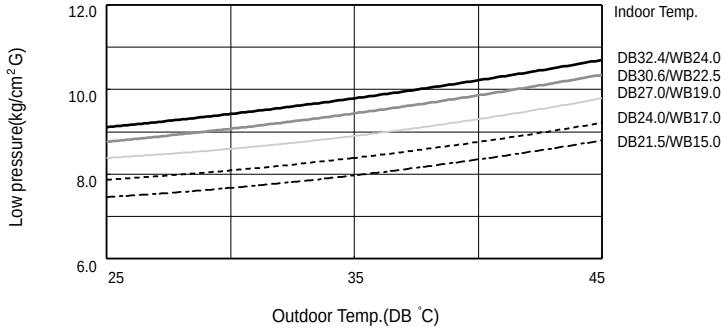
● **7,000BTU**



● **9,000BTU**



● **12,000BTU**



MEMO

Installation

5-1. Selecting Area for Installation

5-2. Installation Diagram of Indoor Unit and Outdoor Unit

5-3. Performing Leak Tests

5-4. Placing the Indoor Unit in Position

5-5. Checking and Testing Operations

Selecting Area for Installation

Select an area for installation that is suitable to customer's needs.

5-1. Selecting Area for Installation

5-1-1. Indoor Unit

1. Make sure that you install the indoor unit in an area providing good ventilation.
   It must not be blocked by an obstacle affecting the airflow near the air inlet and the air outlet.

2. Make sure that you install the indoor unit in an area allowing good air handling and endurance of vibration of the indoor unit.

3. Make sure that you install the indoor unit in an area where there is no source of heat or vapor nearby.

4. Make sure that you install the indoor unit in an area from which hot or cool air is spread evenly in a room.

5. Make sure that you install the indoor unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).

6. Make sure that you install the indoor unit in an area which provides easy pipe connection with the outdoor unit, and easy drainage for condensed water.

7. Make sure that you install the indoor unit in an area which is large enough to accommodate the measurements shown in figure on the next page.

CAUTION

- It is harmful to the air conditioner if it is used in the following environments: greasy areas (including areas near machines), salty areas such as coast areas, areas where sulfuric gas is present such as hot spring areas. Contact your dealer for advice.

Selecting Area for Installation (cont.)

5-1-2. Outdoor Unit

1. Make sure that you install the outdoor unit in area not exposed to the rain or direct sun light.(Install a separate sunblind if exposed to direct sun light.)

2. Make sure that you install the outdoor unit in area allowing the good air moment, not amplifying noise or vibration, especially to avoid disturbing neighbors. (Fix the unit firmly if it is mounted in a high place.)

3. Make sure that you install the outdoor unit in area providing the good ventilation and which is not dusty. It must not be blocked by any obstacle affecting the airflow near the air inlet and the air outlet.

4. Make sure that you install the outdoor unit in area free from animals or plants.

5. Make sure that you install the outdoor unit in area not blocking the traffic.

6. Make sure that you install the outdoor unit in area easy to drain condensed water from the indoor unit.

7. Make sure that you install the outdoor unit in area which provides easy connection within the maximum allowable length of a coolant pipe.

If you have used...	Then...
More than "A" metres of piping	"B"g of refrigerant (R410A) must be added for each extra meter.
Less than "A" metres of piping	The purge time is normal.

MODEL	A	B
SH07 / 09A**	7.5	20
SH12A**	7.5	30

8. Make sure that you install the outdoor unit in an area which is large enough to accommodate the measurements shown in figure on the next page.

5-1-3. Remote Control Unit

1. Make sure that you use the remote control unit in an area free from obstacles such as curtains etc, which may block signals from the remote control unit.

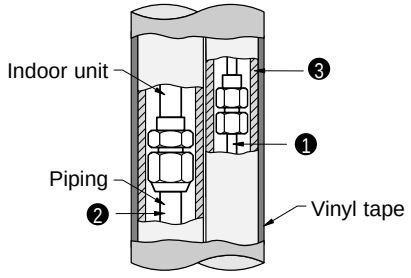
2. Make sure that you put the remote control unit in an area not exposed to direct sunlight, and where there is no source of heat.

3. Make sure that you use the remote control unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).

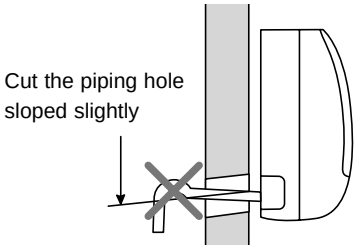
Installation Diagram of Indoor Unit and Outdoor Unit

5-2. Installation Diagram of Indoor Unit and Outdoor Unit

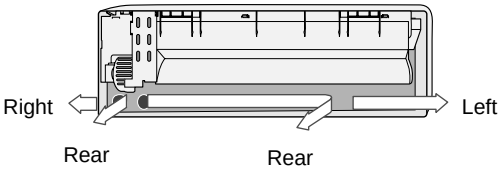
A Indoor unit gas leak test



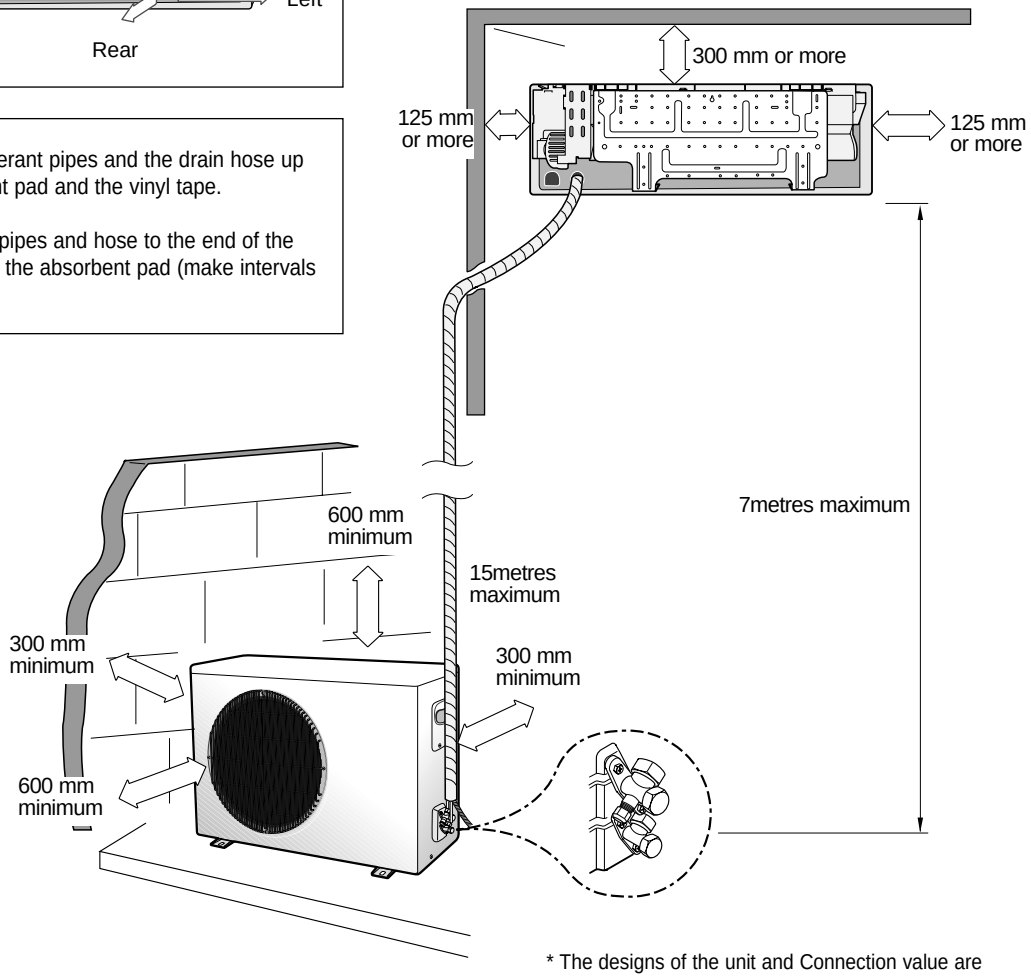
B Drain hose installation



Piping may be laid to the rear, left, right or down.



- Wrap the refrigerant pipes and the drain hose up in the absorbent pad and the vinyl tape.
- Triply wind the pipes and hose to the end of the indoor unit with the absorbent pad (make intervals of 20mm)



* The designs of the unit and Connection value are subject to Change according to the model.

Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

5-2-1. Fixing the Installation Plate

1. Determine the position of the pipe and drain hose hole referring to the right figure and drill the hole with an inner diameter of 65mm so that it slants slightly downwards.

2. **If you are fixing the indoor unit to a… Then follow Steps…**

Wall	**3.**
Window frame	**4 to 6.**

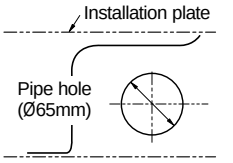
3. Fix the installation plate to the wall in a manner appropriate to the weight of the indoor unit.

   If you are mounting the plate on a concrete wall with anchor bolts, anchor bolts must not be projected by more than 20mm.

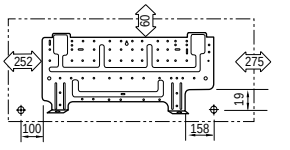
4. Determine the position of the wooden uprights to be attached to the window frame.

5. Attach the wooden upright to the window frame in a manner appropriate to the weight of the indoor unit.

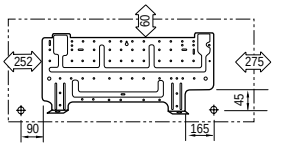
6. Using tapped screws, attach the installation plate to the wooden upright, as illustrated in the last figure opposite.



7K/9K (Unit : mm)



12K



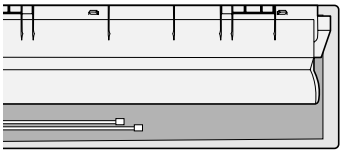
5-2-2. Purging the Unit

On delivery, the indoor unit is loaded with an inert gas. All this gas must therefore be purged before connecting the assembly piping. To purge the inert gas, proceed as follows.

Unscrew the cap at the end of each pipe.

Result *All inert gas escapes from the indoor unit.*

◆ To prevent dirt or foreign objects from getting into the pipes during installation, do NOT remove caps completely until you are ready to connect the piping.

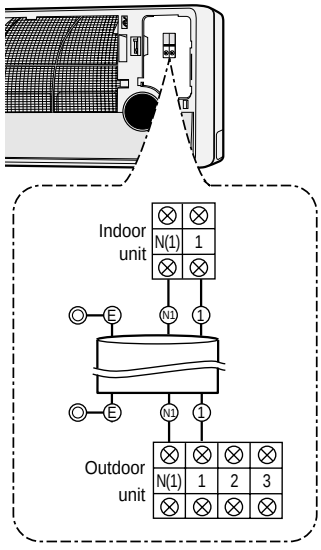


Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

5-2-3. Connecting the Assembly Cable (Cooling Only)

The outdoor unit is powered from the indoor unit via the assembly cable. (7K/9K/12K)

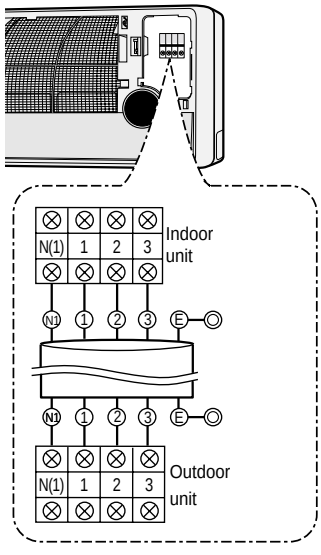
1. Extend the assembly cable if necessary.
2. Open the front grille by pulling on the tab on the lower right and left sides of the indoor unit.
3. Remove the screw securing the connector cover.
4. Pass the assembly cable through the rear of the indoor unit and connect the assembly cable to terminals.
   ◆ Each wire is labeled with the corresponding terminal number.
5. Firmly fix the ass'y cable with clamp wire holder.
6. Pass the other end of the cable through the 65mm hole in the wall.
7. Replace the connector cover, carefully tightening the screw.
8. Close the front grille.
9. For further details on how to plug the other end of the assembly cable into the outdoor unit.



5-2-4. Connecting the Assembly Cable (Heat Pump)

The outdoor unit is powered from the indoor unit via the assembly cable. (7K/9K/12K)

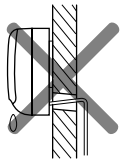
1. Extend the assembly cable if necessary.
2. Open the front grille by pulling on the tabs on the lower right and left sides of the indoor unit.
3. Remove the screw securing the connector cover.
4. Pass the assembly cable through the rear of the indoor unit and connect the assembly cable to terminals.
   ◆ Each wire is labeled with the corresponding terminal number.
5. Pass the other end of the cable through the 65 mm hole in the wall.
6. Replace the connector cover, carefully tightening the screw.
7. Close the front grille.
8. For further details on how to plug the other end of the assembly cable into the outdoor unit.



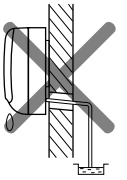
Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

5-2-5. Installing and Connecting the Indoor Unit Drain Hose

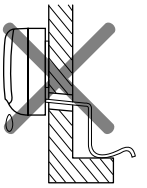
Care must be taken when installing the drain hose for the indoor unit to ensure that any condensed water is correctly drained outside. When passing the drain hose through the 65mm hole drilled in the wall, check that none of the following situation occur.



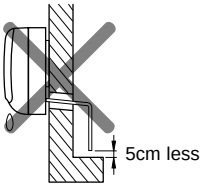
The hose must NOT slope upwards.



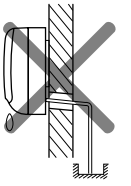
The end of the drain hose must NOT be placed in water.



Do NOT bend the hose in different directions.



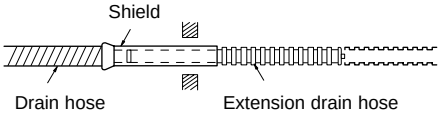
Keep a clearance of at least 5cm between the end of the hose and the ground.



Do NOT place the end of the drain hose in a hollow.

To install the drain hose, proceed as follows

1. If necessary, connect the 2-meter extension to the drain hose.
2. If you are using the extension, insulate the inside part of the extension drain hose with a shield.
3. Pass the drain hose under the refrigerant piping, taking care to keep the drain hose tight.
4. Pass the drain hose through the hole in the wall, making sure that it is sloping downwards, as shown in the illustrations above.

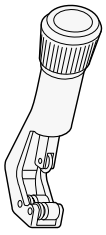


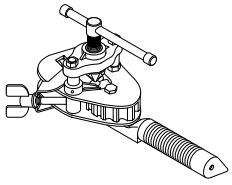
The hose will be fixed permanently into position once the whole installation has been tested for gas leaks.

Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

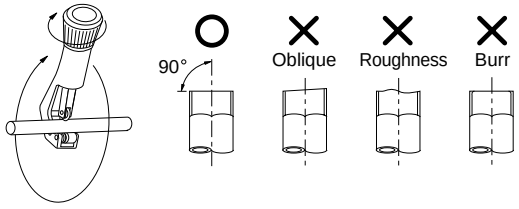
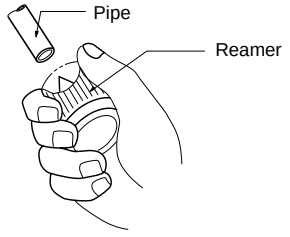
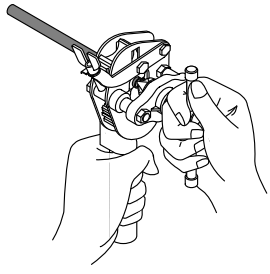
5-2-6. Flare Modification

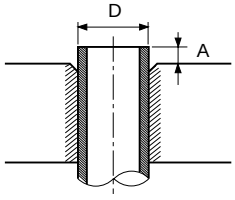
● **TOOLS USED**





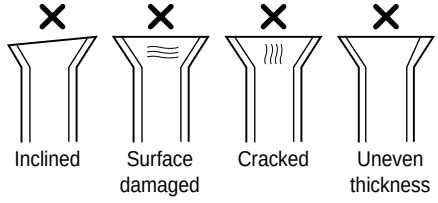
● **FLARE MODIFICATION PROCEDURE**

1. Cut the pipe using a pipe cutter.	
2. Remove burrs at the tip of the pipe cut. **CAUTION** • Burrs not removed may result in leakage of gas.	
3. Insert a flare nut into the pipe and modify flare.	



Outer diameter	A(mm)
ø6.35mm	1.3
ø9.52mm	1.8
ø12.7mm	2.0

*** Unproper flaring**



Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

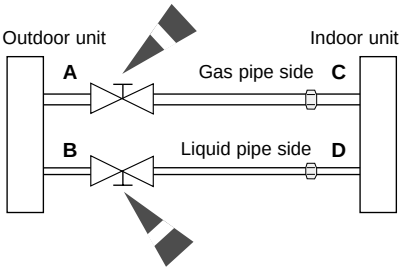
5-2-7. Air-Purge Procedure

The outdoor unit is loaded with sufficient R22 refrigerant for 5 metres of piping. The air in the indoor unit and in the pipe must be purged. If air remains in the refrigeration pipes, it will affect the compressor, reduce to cooling/heating capacity and could lead to a malfunction. Refrigerant for air purging is not charged in the outdoor unit. Use Vacuum Pump as shown at the figure.

1. Connect each assembly pipe to the appropriate valve on the outdoor unit and tighten the flare nut.

2. Referring to the illustration opposite, tighten the flare nut first manually and then with a wrench, applying the following torque.

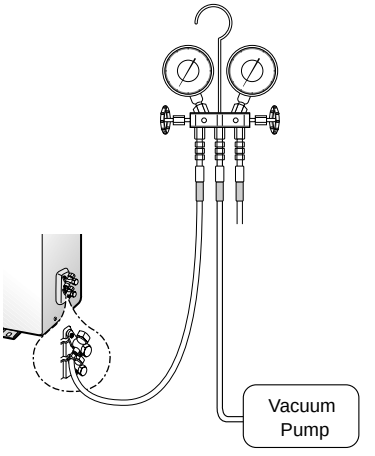
Outer Diameter	Torque(kg·cm)
6.35mm	140~170
9.52mm	250~280
12.70mm	380~420



3. Connect the charging hose of low pressure side of manifold gauge to the packed valve having a service port as shown at the figure.

4. Open the valve of the low pressure side of manifold gauge counterclockwise.

5. Purge the air from the system using vacuum pump for about 10 minutes.
- ◆ Close the valve of the low pressure side of manifold gauge clockwise.
- ◆ Make sure that pressure gauge show -0.1MPa(-76cmHg) after about 10minutes.
  This procedure is very important in order to avoid gas leak.
- ◆ Turn off the vacuum pump
- ◆ Remove the hose of the low pressure side of manifold gauge.



* The designs and shape are subject to change according to the model.

Adding Refrigerant

Refrigerant must be added if the piping measures more than 7.5 metres in length. This operation can only be performed by a qualified refrigeration specialist.

If you have used...	Then...
More than "A" metres of piping	"B" of refrigerant (R410A) must be added for each extra meter.
Less than "A" metres of piping	The purge time is normal.

Refer to the Service Manual for more details on this operation.

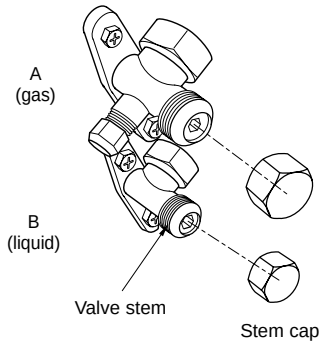
MODEL	A	B
SH07/09A✳✳	7.5	20
SH12A✳✳	7.5	30

Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

6. Set valve cork of both liquid side and gas side of packed valve to the open position.

7. Mount the valve stem nuts and the service port cap to the valve, and tighten them at the torque of 183kgf·cm with a torque wrench.

8. Check for gas leakage.
- ◆ At this time, especially check for gas leakage from 3-Way valve's stem nuts, and from the service port cap.

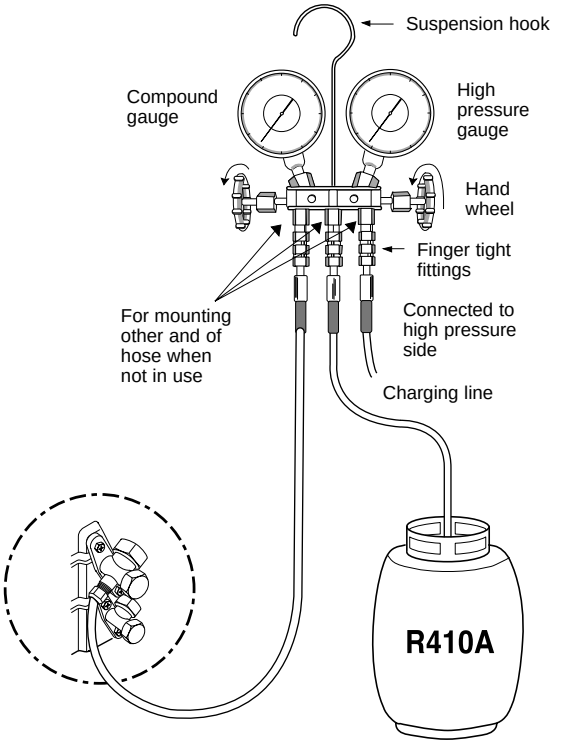


Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

5-2-8. Refrigerant Refill

- **Refill an air-conditioner with refrigerant when refrigerant has been leaked at installing or using.**

1. Purge air(for new installation only).
2. Turn the 3-Way valve clockwise to close, connect the pressure gauge (low pressure side) to the service valve, and open the 3-Way valve again.
3. Connect the tank to refill with refrigerant
4. Set the unit to cool operation mode.
5. Check the pressure indicated by the pressure gauge(low pressure side).
   * Standard pressure should be 4.5~5.5kg/cm^2 in a regular and high operation mode.
6. Open the refrigerant tank and fill with refrigerant until the rated pressure is reached.
   * It is recommended not to pour the refrigerant in too quickly, but gradually while operating a pressure valve.
7. Stop operation of the air conditioner.
8. Close the 3-Way valve, disconnect the pressure gauge, and open the 3-Way valve again.
9. Close the cap of each valve.



Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

5-2-9. Refrigerant Adjustment

Class	At installation		At service	
Connection Pipe Length	Air-Purge Method	Refrigerant Adjustment	Air-Purge Method	Refrigerant Quantity
Standard 7.5m	Refer to the detailed Air-Purge Procedure	Unnecessary	Purge air using a vacuum pump or an additional refrigerant cylinder.	refer to specification sheet
Max. ~15m		Add "A" of refrigerant (R410A) for every 1m.		Add "A" of refrigerant (R410A) for every 1m.

It would be the best choice to use the standard tube length to keep the basic quality of Room Air conditioner, for example cooling and heating capacity, sound level, vibration level, and reliability.
But, according to a certain different installation condition, the connection tube length could be changed in the recommendation length that is shown above.
In this case, installer should keep the installation condition to keep the quality of Room Air conditioner.

MODEL	"A"	"B"
7K/ 9K	20(g/m)	7.5
12K	30(g/m)	7.5

❋ *Refrigerant should be charged additionally as written above according to the change of the length of the connection tube. It needs to affect the decrease in cooling and heating capacity or of the reliability of compressor that may be caused by a lack of refrigerant.*

❋ *Installation position difference between the indoor unit and the outdoor unit should not exceed over than "B" meters.*

❋ *When the connection pipe is been extended longer than 7.5 meters, it might need to change the diameter of the electrical wire to a larger size in order to keep a voltage drop for starting room air conditioner is not less than 85% of the rated voltage. And then, a voltage meter will be useful to check the rate of the voltage drop.*

5-2-10. Flare Nut Fixing Torque

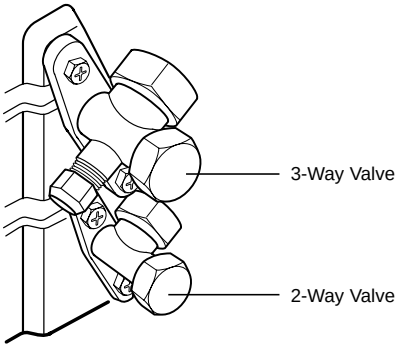
Outer diameter	Torque (kg-cm)	
	Fixing Torque	Final Torque
ø 6.35 mm (Liquid Side)	160	200
ø 9.52 mm (Gas Side)	300	350
ø 12.7 mm (Gas Side)	500	550

Installation Diagram of Indoor Unit and Outdoor Unit (cont.)

5-2-11. "Pump down" Procedure

Pump down will be carried out when an evaporator is replaced or when the unit is relocated in another area.

1. Remove the caps from the 2-Way valve and the 3-Way valve.
2. Turn the 3-Way valve clockwise to close and connect a pressure gauge (low pressure side) to the service valve, and open the 3-Way valve again.
3. Set the unit to cool operation mode. (Check if the compressor is operating.)
4. Turn the 2-Way valve clockwise to close.
5. When the pressure gauge indicates "0" turn the 3-Way valve clockwise to close.
6. Stop operation of the air conditioner.
7. Close the cap of each valve.



Relocation of the Air Conditioner

• Refer to this procedure when the unit is relocated.

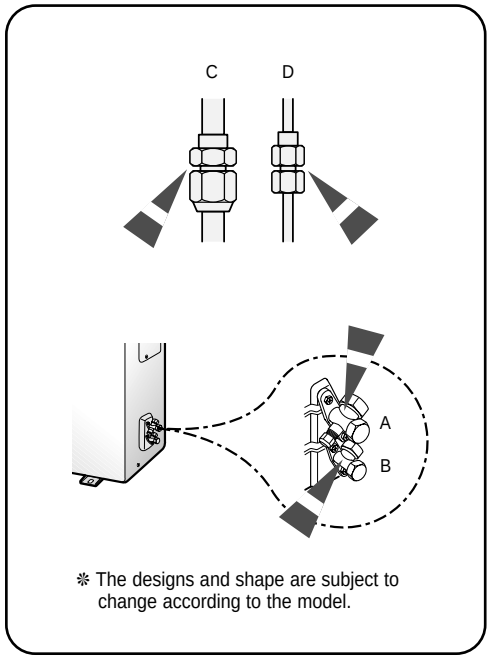
1. Carry out the pump down procedure (refer to the details of 'pump down').
2. Remove the power cord.
3. Disconnect the assembly cable from the indoor and outdoor units.
4. Remove the flare nut connecting the indoor unit and the pipe.
   At this time, cover the pipe of the indoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
5. Disconnect the pipe connected to the outdoor unit.
   At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
6. Make sure you do not bend the connection pipes in the middle and store together with the cables.
7. Move the indoor and outdoor units to a new location.
8. Remove the mounting plate for the indoor unit and move it to a new location.

Performing Leak Tests

5-3. Performing Leak Tests

- **Before completing the installation (insulation of the cable, hose and piping and fixing of the indoor unit to the installation plate), you must check that there are no gas leaks.**

To check for gas leaks on the...	Then, using a leak detector, check the...
Indoor unit	Flare nuts at the end of sections C and D.
Outdoor unit	Valves on sections A and B.



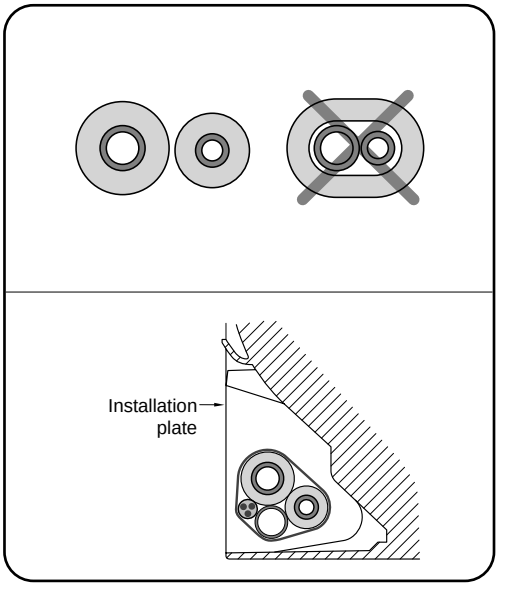
❊ The designs and shape are subject to change according to the model.

Placing the Indoor Unit in Position

5-4. Placing the Indoor Unit in Position

- **Once you have checked that there are no leaks in the system, you can insulate the piping, hose and cables and place the indoor unit on the installation plate.**

1. To avoid condensation problems, place heat-resistant polyethylene foam separately around each refrigerant pipe in the lower part of the indoor unit.
2. Wind insulating tape around the pipe, assembly cable and drain hose.
3. Place the resulting bundle carefully in the lower part of the indoor unit, making sure that it does not jut out from the rear of the indoor unit.
4. Hook the indoor unit up to the installation plate and move the unit to the right and left until you are sure that it is securely to place in.
5. Finish wrapping insulating tape around the rest of the piping leading to the outdoor unit.
6. Using clamps (optionally supplied), attach the piping to the wall wherever possible.



Checking and Testing Operations

5-5. Checking and Testing Operations

● **To complete the installation, perform the following checks and tests to ensure that the air conditioner is operating correctly.**

■ **PREMIUM**

1. Review all the following elements in the installation:

- ◆ Installation site strength
- ◆ Piping connection tightness to detect any gas leakages
- ◆ Connection wiring
- ◆ Heat-resistant insulation of the piping
- ◆ Drainage
- ◆ Earthing wire connection
- ◆ Correct operations (follow the steps below)

2. Press the On/Off button.

Result
- ◆ *The indicator lights on the indoor unit flash at half-second intervals.*
- ◆ *While the indoor unit opens, the indoor unit fan runs to start.*

3. Press the Mode button.

Result
- ◆ *If you press the Mode button several times, you can choose the type you want.*

4. Air flow direction

- ◆ Press the button and check that the air flow blades work properly.

Checking and Testing Operations (cont.)

■ DELUXE

1. Review all the following elements in the installation:

- ◆ Installation site strength
- ◆ Piping connection tightness to detect any gas leakages
- ◆ Connection wiring
- ◆ Heat-resistant insulation of the piping
- ◆ Drainage
- ◆ Earthing wire connection
- ◆ Correct operations (follow the steps below)

2. Press the On/Off button.

Result

- ◆ *The indicator lights on the indoor unit flash at half-second intervals.*
- ◆ *While the indoor unit opens, the indoor unit fan runs to start.*

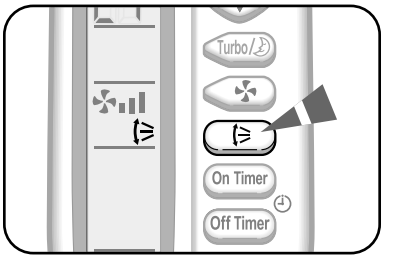
3. Press the Turbo/ button.

Result

- ◆ *The temperature and fan settings are adjusted automatically.*
- ◆ *If you press the Turbo/ button one or more times until TURBO or disappears, the air conditioner is reset automatically to the previous mode, temperature and fan settings.*

4. Air flow direction

- ◆ Press the button and check that the air flow blades work properly.



Features & Operation

6-1. The Feature of key in Remote Control

6-2. Details for Operation Property

6-3. Operating Recommendations

6-4. Temperature and Humidity Ranges

The Feature of key in Remote Control

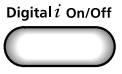
6-1. The Feature of key in Remote Control

6-1-1. S✳07APG / S✳09APG / S✳12APG

No	NAMED OF KEY	FUNCTION OF KEY
1	(On/Off)	On/Off button. Press the button to stop or run the air conditioner.
2	(UP)	Temperature adjustment button(UP). To increase the temperature by the pressing the temperature button.
	(DOWN)	Temperature adjustment button(DOWN). To decrease the temperature by the pressing the temperature button.
3	Mode	Mode selection button. Each time you press this button Mode is changed in the following order Auto → ❄ → 💧 → 🌀 → ☀ Auto : Auto Mode 🌀 : Fan Only ❄ : Cool Mode ☀ : Heat Mode 💧 : Dry Mode
4		Fan speed adjustment button. Each time you press this button, FAN SPEED is changed in the following order. Low → Medium → High Automatic(rotated : → → →)
5		Swing button. It adjusts the airflow to upward and downward.
6	TURBO	Turbo button. The air conditioner cools or heats the room as quickly as possible. After 30minutes, the air conditioner is reset automatically to the previous mode.
7		Energy saving button. If you wish to save energy when using your air conditioner, select the Energy saving mode with the button.
8		Sleep button. The sleep timer can be used when you are cooling or heating your room to switch the air conditioner off automatically after a period of six hours.

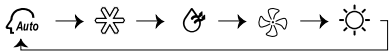
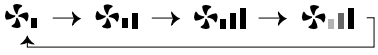
The Feature of key of Remote Control (cont.)

The Feature of key in Remote Control (cont.)

No	NAMED OF KEY	FUNCTION OF KEY
9		Anion button. Press the button to generate ion from the air conditioner.
10		On Timer button. The On Timer enables you to **switch on** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To set the operating time, press the button one or more times until the required time display.
11		Off Timer button. The Off Timer enables you to **switch off** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To set the operating time, press the button one or more times until the required time display.
12		Timer Set/Cancel button. After setting On Timer or Off Timer, press the button to set it completely. And press the button again to cancel On Timer or Off Timer set.
13		Digital *i* On/Off button. If you want to turn off the display during operation press the button.

The Feature of key of Remote Control (cont.)

6-1-2. S*07AS2 / S*09AS2 / S*12AS4

No	NAMED OF KEY	FUNCTION OF KEY
1		On/Off & Timer Set/Cancel button. Press the button to stop and run the air conditioner or On/Off timer set up.
2		Mode selection button. Each time you press this button, Mode is changed in the following order.  : Auto Mode : Fan Only : Cool Mode : Heat Mode : Dry Mode
3	(UP)	Temperature adjustment button(UP). To increase the temperature by the pressing the temperature button.
	(DOWN)	Temperature adjustment button(DOWN). To decrease the temperature by the pressing the temperature button.
4		Turbo/Sleep mode selection button. Press the button one or more times until TURBO appears. The air conditioner cools or heats the room as quickly as possible. After 30minutes, the air conditioner is reset automatically to the previous mode.
		Turbo/Sleep mode selection button. Press the button one or more times until appears. The sleep timer can be used when you are cooling or heating your room to switch the air conditioner off automatically after a period of six hours.
5		Fan speed adjustment button. Each time you press this button, FAN SPEED is changed in the following order. 
6		Swing button. It adjusts the airflow to upward and downward.
7		On Timer button. The On Timer enables you to **switch on** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel, press the (Set/Cancel) button.
8		Off Timer button. The Off Timer enables you to **switch off** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel, press the (Set/Cancel) button.
9		Energy Saving button. If you wish to save energy when using your air conditioner, select the Energy saving mode with the button.

Details for Operation Property

6-2. Details for Operation Property

1. AUTO MODE : In this mode, operation mode(COOL, HEAT) is selected automatically by the room temperature of initial operation.

   ▶ **In case of Heat pump model.**

Room Temp	Operation Type
Tr ≥ 21°C+ΔT	Cool Operation (Set Temp:24˚C+ΔT)
21°C +ΔT>Tr	Heat Operation (Set Temp:22˚C+ΔT)

   ▶ **In case of Cooling only model.**

Operation Type	Room Temp.	
Cool Operation	Tr ≥ 25°C+ΔT	Compressor ON
	Tr ≤ 24°C+ΔT	Compressor OFF

   ΔT= -1°C, -2°C, 0°C, +1°C, +2°C
   ΔT is controlled by setting temperature up/down key of remote control

2. COOL MODE : The unit operates according to the difference between the setting and room temperature. (18°C~30°C)

3. HEAT MODE(In case of Heat pump model) :
   The unit operates according to the difference between the setting and room temperature.(16°C~30°C)
   *Prevention against cold wind : In order to prevent the cool air from flowing out at the heat mode, the indoor fan does not operate or operates very slowly in the following cases. At this time, the indoor heat exchanger will be preheating.
   - For 3~5 minutes after the initial operation
   - For deicing operation
   - The operation of an indoor fan in accordance with the temperature of an indoor heat exchanger

The temperature of indoor heat exchanger	Indoor fan speed
below 28˚C	off
28˚C~below 34˚C	LL Speed
34˚C~below 40˚C	L Speed
above 40˚C	Setting Speed

   *High temperature release function : It is a function to detect an outdoor overload by the sensor of an indoor heat exchanger and to turn the outdoor fan or the compressor ON/OFF for safety.
   *Deice : Deicing operation is controlled by indoor unit's heat exchanger temperature and accumulating time of compressor's operation.
   Deice ends by sensing of the processing time by deice condition.

4. DRY MODE : Has 3 states, each determined by room temperature.
   The unit operates in DRY mode.
   *Compressor ON/OFF Time is controlled compulsorily(can not set up the fan speed, always breeze).
   *Protective function : Low temperature release. (Prevention against freeze)

5. TURBO MODE : This mode is available in AUTO, COOL, HEAT, DRY, FAN MODE.
   When this button is pressed at first, the air conditioner is operated "powerful" state for 30 minutes regardless of the set temperature, room temperature.
   When this button is pressed again, or when the operating time is 30 minutes, turbo operation mode is canceled and returned to the previous mode.
   *But, if you press the TURBO button in DRY or FAN mode that is changed with AUTO mode automatically.

6. SLEEP MODE : Sleep mode is available only in COOL or HEAT mode.
   The operation will stop after 6 hours.
   *In COOL mode : The setting temperature is automatically raised by 1°C each 1hour When the temperature has been raised by total of 2°C, that temperature is maintained.
   *In HEAT mode : The setting temperature is automatically dropped by 1°C each 1hour.
   When the temperature has been dropped by total of 2°C, that temperature is maintained.

7. FAN SPEED : Manual (3 step), Auto (4 step)
   Fan speed automatically varies depending on both the difference between setting and the room temperature.

8. COMPULSORY OPERATION :
   For operating the air conditioner without the remote control.
   *The operating is the same function that AUTO MODE in the remote control.

Details for Operation Property (cont.)

9. SWING : BLADE-H is rotated vertically by the stepping motor.

• S✳07APG / S✳09APG / S✳12APG

*Swing Set : Press the button under the remote control is displayed on LCD the and the blades move up and down. If the one more time press the button, blades location is stop.

• S✳07AS2 / S✳09AS2 / S✳12AS4

*Swing Set : Press the button under the remote control is displayed on LCD the and the blades move up and down. If the one more time press the button, blades location is stop.

10. SETTING THE ON/OFF TIMER. :

*ON TIMER : The On Timer enables you to switch on the air conditioner automatically after a given period of time. You can set the period of time from 30 minutes to 24 hours.

*OFF TIMER : The Off Timer enables you to switch off the air conditioner automatically after a given period of time. You can set the period of time from 30 minutes to 24 hours.

11. GENERATING ANION :

The air conditioner can generate anion with an ionizer in the indoor unit.

12. SELF DIAGNOSIS

• S✳07APG / S✳09APG / S✳12APG

Error Mode	DISPLAY 7-SEGMENT		Remark
	OPERATION OFF	OPERATION ON	
Indoor unit room temperature sensor error (open or short)	OFF	E1	
Indoor unit heat exchanger temperature sensor error(open or short)	OFF	E2	
Indoor FAN MOTOR error : Keep the RPM value 450 below for 15 seconds	OFF	E3	
EEPROM error	OFF	E6	
Error in option In case of No option set-up In case of option data error	All lamp blinking	All lamp blinking	

• S✳07AS2 / S✳09AS2 / S✳12AS4

Description	LAMP or DISPLAY Monitor		
	OPERATION	TIMER	TURBO
	≋	◷	TURBO
Indoor unit room temperature sensor error(open or short)	○	◑	○
Indoor unit heat exchanger temperature sensor error(open or short)	◑	◑	○
Indoor fan motor malfunction	◑	○	◑
EEPROM error	○	◑	◑
Option error(option wasn't set up or option data error)	◑	◑	◑

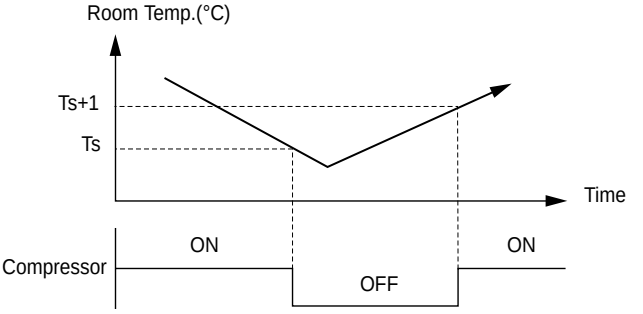
○ : Lamp off ◑ : Lamp flickering

13. BUZZER SOUND : Whenever the On/Off button is pressed or whenever change occurs to the condition which is set up or select, the compulsory operation mode, buzzer is sounded "beep".

Details for Operation Property (cont.)

6-2-1. Cooling Mode Operating

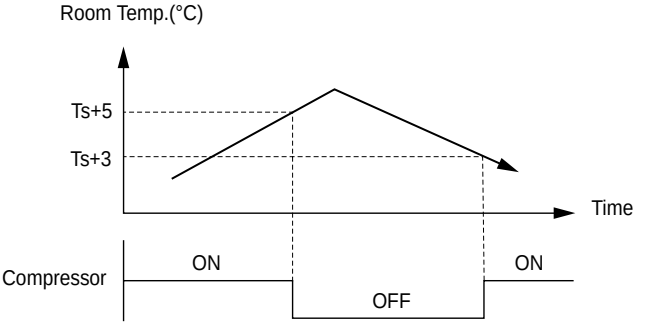
When selecting the Cooling Mode Operation, the unit will operate according to the setting by the remote controller and the operation is as well as the following. Room temperature can be set in 1°C steps in the range of 18 to 30°C.



♦ Ts means Remote Controller setting Temperature

6-2-2. Heating Mode Operation(In case of Heat pump model)

When selecting the Heating Mode Operation, the unit will operate according to the setting by the remote controller and the operation is as well as the following. Room temperature can be set in 1°C steps in the range of 16 to 30°C.



6-2-3. Automatic Operation

When Automatic operation is set by the remote controller, the air conditioner senses the room temperature then automatically selects the operation mode and setting temperature.

1. In case of Heat pump model.

	Operating Mode	Setting Temp.	Remarks
Room Temp ≥ 21°C + ΔT	Cooling	Tsp = 24°C + ΔT	ΔT = -2, -1, 0, 1, 2°C
Room Temp < 21°C + ΔT	Heating	Tsp = 22°C + ΔT	

◆ In case that Room Temp. ≥ 21°C + ΔT, the unit is operated in the Cool Mode.
◆ In case that Room Temp. < 21°C + ΔT, the unit is operated in the Heat Mode.
◆ ΔT means that user is able to change setting temperature within ±2°C.

2. In case of Cooling only model.

Operating Type	Room Temp.		Remarks
Cool Operation	Tr ≥ 25°C + ΔT	Compressor ON	ΔT = -2, -1, 0, 1, 2°C
	Tr ≤ 24°C + ΔT	Compressor OFF	

◆ In case the Room Temp. ≥ 25°C + ΔT, the unit is operated Compressor.
◆ In case the Room Temp. ≤ 24°C + ΔT, the unit is not operated Compressor.
◆ ΔT means that user is able to change setting temperature within ±2°C.

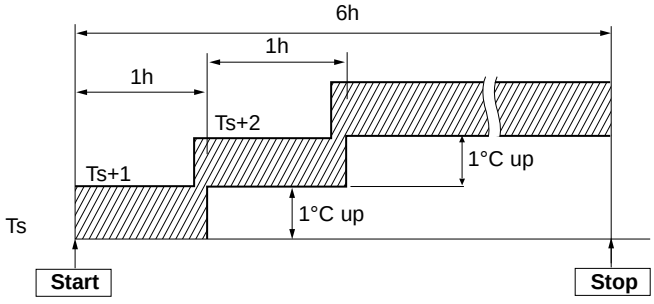
Details for Operation Property (cont.)

6-2-4. Sleeping Operation

● AT COOLING MODE

When you set the sleep mode, the following movement will start to avoid over cooling.

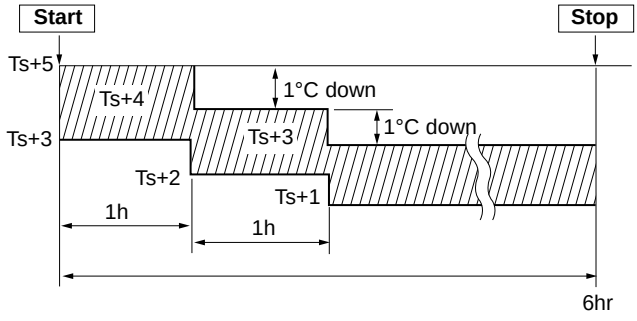
- ◆ The indoor fan speed is fixed by setting the remote controller.
- ◆ The setting temperature will rise by 1°C at the starting of operation and by 1°C one hour later.
- ◆ The operation will stop after 6 hours.



● AT HEATING MODE

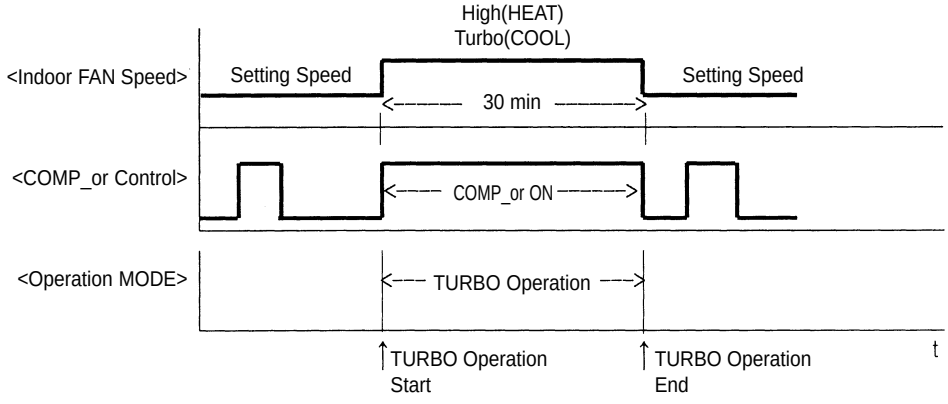
When you set the sleep mode, the following movement will start to avoid overheating.

- ◆ The indoor fan speed is fixed by setting the remote controller.
- ◆ The setting temperature will be dropped by 1°C at the starting of operation and by 1°C one hour later.
- ◆ The operation will stop after 6 hours.



6-2-5. Turbo Operation (Cooling or Heating Mode)

If turbo operation is selected during heating or cooling mode, compressor is operated for 30 minutes regardless of room temperature. After 30 minutes of turbo operation the unit will operate in normal state



Details for Operation Property (cont.)

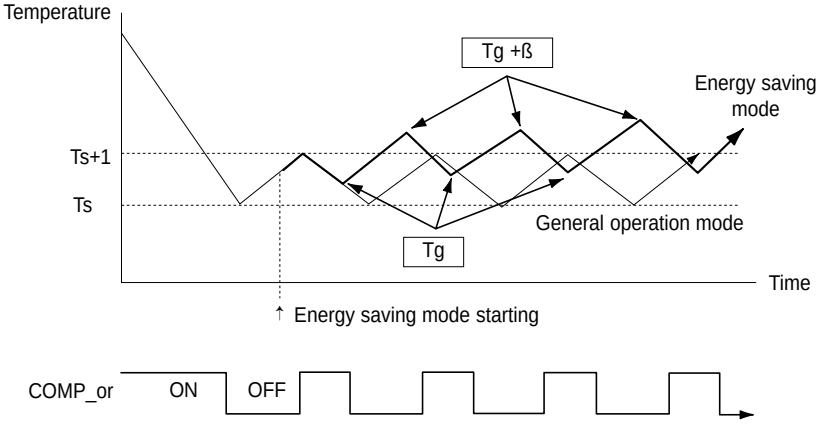
6-2-6. Energy saving operation control

● In case of Cooling Only model

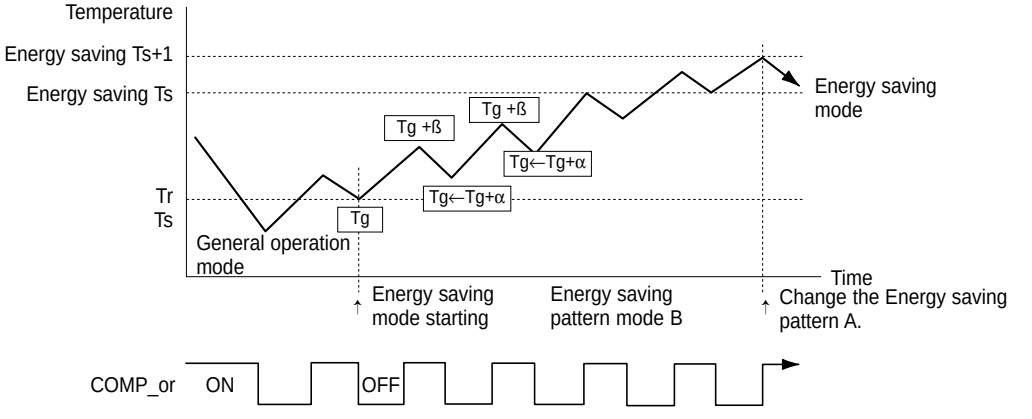
The Energy saving mode is applicable to only in both the COOL mode and AUTO mode.
(In case of Heat Pump model : The Energy saving mode is applicable to only in the COOL mode.)

◆ Energy saving operation specification
- If you select the Energy saving mode during automatic operation, the setting temperature(Ts) will be fixed to "the standard value +2°C"(26°C).
- If you select the Energy saving mode during cooling operation, you may set the room temperature from "26°C to 30°C", but if you hope to control the room temperature below 26°C in the Energy saving mode, the room temperature will be compelled to be 26°C.
- If you select the Energy saving mode, the up/down louver will enter the "Swing" status.

- OPERATION PATTERN A : In the Energy saving mode when Room Temperature(Tr) equals to the Setting Temperature(Ts) or over.



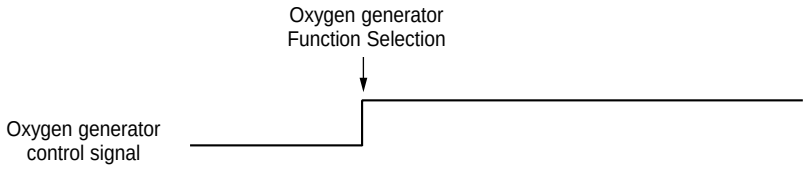
- OPERATION PATTERN B : In the Energy saving mode when Room Temperature(Tr) is below the Setting Temperature(Ts).



Details for Operation Property (cont.)

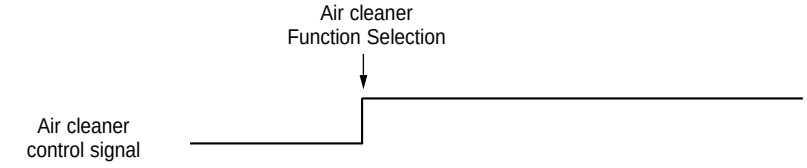
6-2-7. Oxygen generator control(Optional)

- ◆ If you press the 'Oxygen GENERATOR' button in the remote control, it will output the Oxygen Generator Control signal.
- ◆ The 'Oxygen GENERATOR' may be selected in all operation status(on or off)
- ◆ If you select the 'Oxygen' function during operation off, the system will enter the FAN mode, Oxygen function on, and low fan speed.



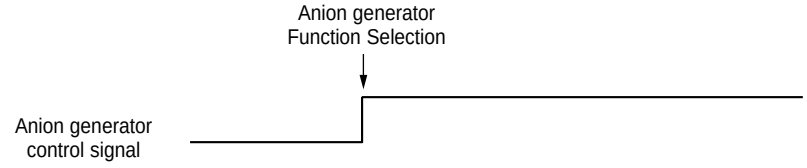
6-2-8. Air cleaner control(Optional)

- ◆ If you press the 'AIR CLEANER' button in the remote control, it will output the Air Cleaner Control signal
- ◆ The 'AIR CLEANER' may be selected in all operation status(on or off)
- ◆ If you select the 'AIR CLEANER' function after the above operation finishes, the system will enter the FAN mode, AIR CLEANER function on, and low fan speed.



6-2-9. Anion generator control(Optional)

- ◆ If you press the 'ANION GENERATOR' button in the remote control, it will output the ANION GENERATOR Control signal
- ◆ The 'ANION GENERATOR' may be selected in all operation status(on or off)
- ◆ If you select the 'ANION GENERATOR' function after the above operation finishes, the system will enter the FAN mode, ANION GENERATOR function on, and low fan speed.



Details for Operation Property (cont.)

6-2-10. Indoor fan control in the Heating Mode

Indoor fan is controlled depending on the temperature of indoor heat exchanger in the heating mode.

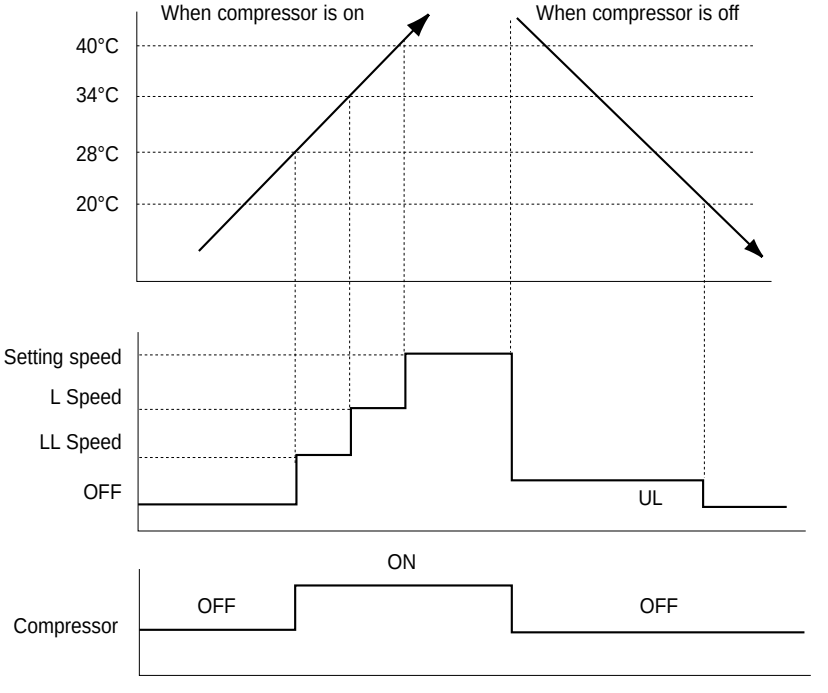
● INDOOR FAN CONTROL

◆ When compressor begins operating

The temperature of indoor heat exchanger	Indoor fan speed
below 28°C	off
28°C ~ below 34°C	LL speed
34°C ~ below 40°C	L speed
above 40°C	setting speed

◆ When compressor stops operating

The temperature of indoor heat exchanger	Indoor fan speed
above 20°C	UL speed
below 20°C	off
after 10 minutes when compressor stops operating	off



Details for Operation Property (cont.)

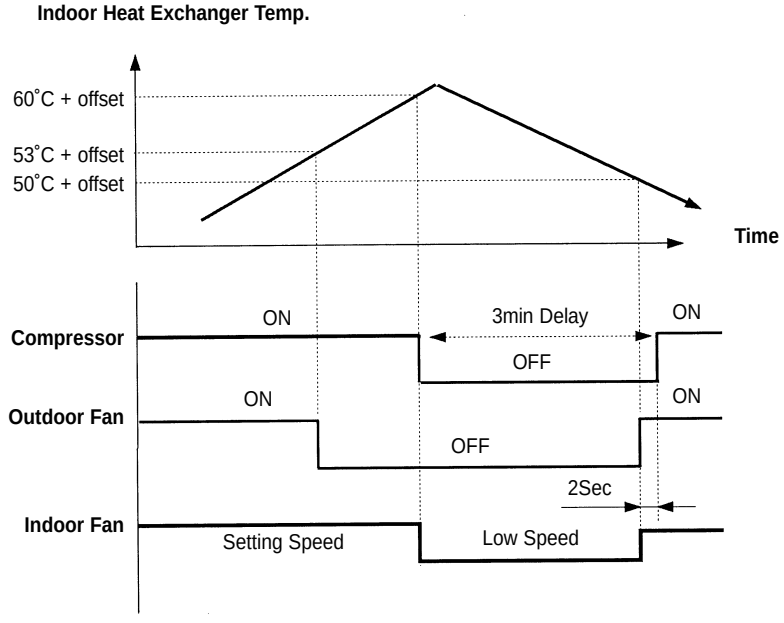
6-2-11. Overload protection control

● AT HEATING MODE

◆ If indoor heat exchanger temp. is over 53°C, outdoor fan turns off.

◆ If indoor heat exchanger temp. is over 60°C, outdoor compressor stops and Indoor fan speed is low.

◆ After compressor and fan are off if indoor heat exchanger temp. is below 50°C, indoor fan and outdoor compressor and outdoor fan operate normally.



*offset = 0, 1, 2, 3˚C

Details for Operation Property (cont.)

6-2-12. Low Temp Release

● AT COOLING MODE

◆ If the temperature of indoor heat exchanger is below -1°C for over 6 minutes, the outdoor fan turns off.

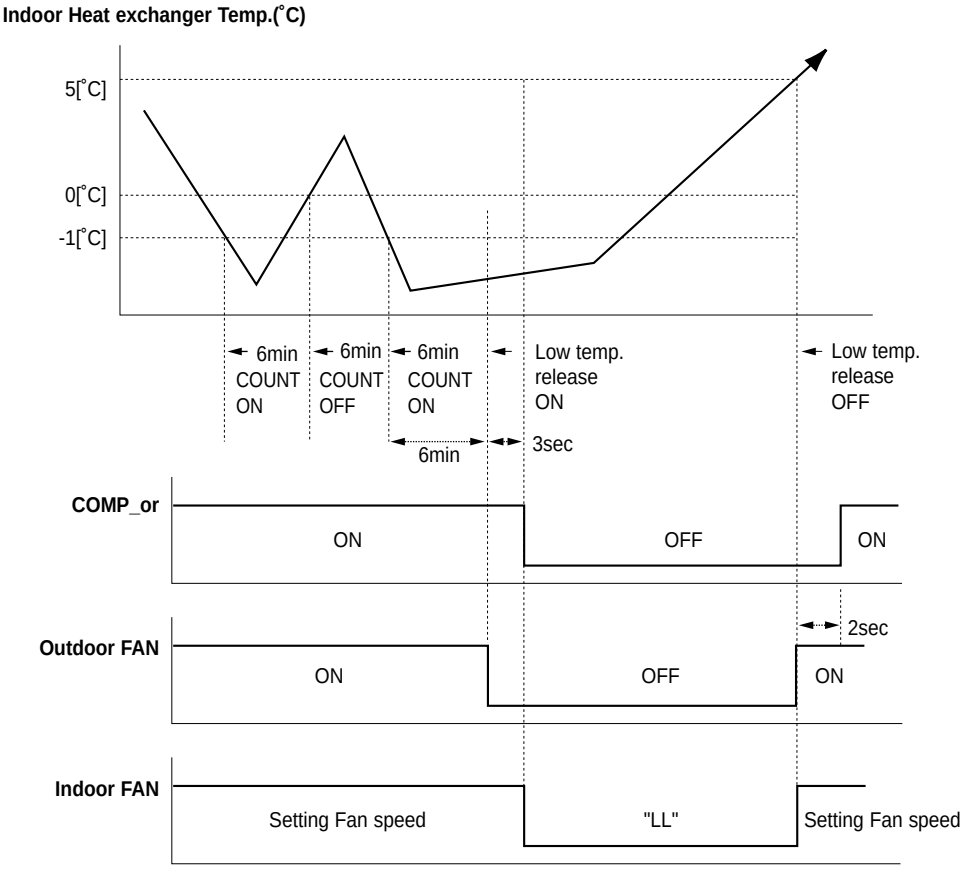
◆ If the temperature of indoor heat exchanger increase over 5°C during the first protection function, the first freezing protection function is released and the outdoor fan turns on.

◆ If the temperature of indoor heat exchanger increase over 0°C during 6 minutes counting, 6 minutes counter is cleared.

◆ If the temperature of indoor heat exchanger maintains for a minute at -4°C during the 6 minutes counting, switch off the compressor.

◆ If the compressor is off by Low Temp. Release, 5 minutes release is impossible.

◆ **Operating Pattern**



✻LL = Low FAN speed – 35rpm

Details for Operation Property (cont.)

6-2-13. Defrost control

Defrost operation is controlled by sensing the temperature of indoor heat exchanger.

◆ **How to sense defrost conditions**

A condition

The temperature of indoor heat exchanger is checked in intervals of 1 minute. In case the temperature of indoor heat exchanger drops more than 0.5°C for 6 minutes, it is considered as one cycle. If it happens 3 times continuously, It is said that "A condition" is satisfied.

B condition

If the temperature of indoor heat exchanger is below about 40±3°C when the compressor is on, it is considered as defrost "B condition"

C condition

When the accumulating time of compressor ON is over 20 minutes.

D condition

When the accumulating time of compressor ON is over 3Hr.

E condition

When operating time of compressor without stopping is over 6 minutes.

F condition

If the compressor is off(thermo off) when the temperature of indoor heat exchanger is below about 46°C, it is considered as one cycle.
If it happens 2 times continuously, It is said that "F condition" is satisfied.

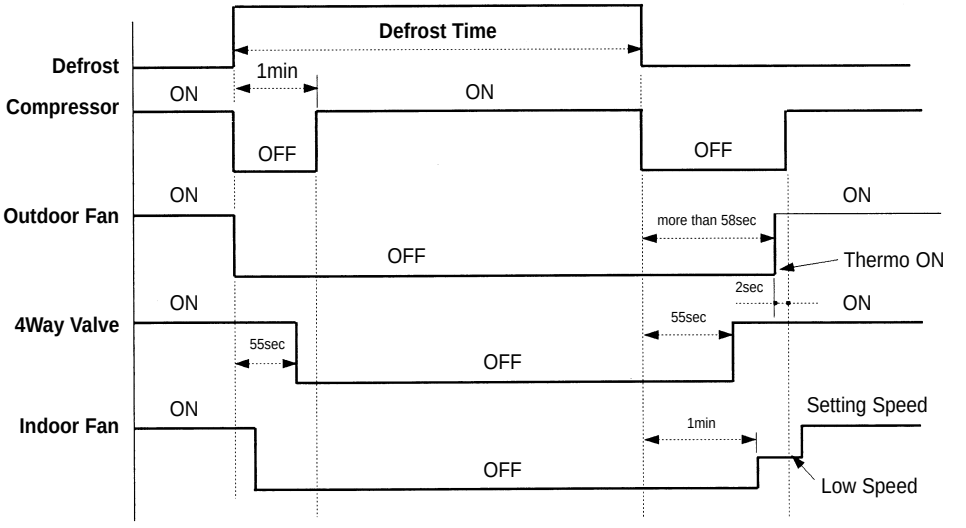
G condition

When the accumulating time of compressor ON is over 90 minutes.

◆ **Defrost operation conditions**
A*X*B*X*C *condition or*
B*X*D*X*E *condition*
F*X*G *condition*
Defrost time : 5~8 minutes

Details for Operation Property (cont.)

◆ **Operation pattern**



Operating Recommendations

6-3. Operating Recommendations

● **Here are a few recommendations that you should follow when using your air conditioner.**

Topic	Recommendation
Heating performances	The heat pump absorbs heat from outside air and brings it indoors. If the temperature of the outside air drops, the air conditioner will heat less. If you find that the room is not warm enough, use an additional heating appliance.
Warm air circulation	The air conditioner circulates warm air to heat your room; as a result, some time will be required after starting the air conditioner to warm the entire room. If necessary, set the air conditioner going a short time before you wish to use the room.
Frost	When outside temperatures are low and humidity is high, frost may form in the outdoor unit when heating with your air conditioner. If this happens: ◆ The heating operation is stopped. ◆ The Deice mode is triggered automatically for about seven minutes ◆ The OPERATION indicator on the indoor unit lights up red. No intervention is required from you; after about seven minutes, the air conditioner starts operating again normally.
High indoor and outdoor temperatures	If both the indoor and outdoor temperatures are high and you select the the Heat mode, the outdoor unit's fan and compressor may stop. This is normal; simply wait until the air conditioner switches on again.
Power failure	If a power failure occurs when the air conditioner is operating, the unit is switched off. When the power returns, you must press ⏻ to restart it.

Temperature and Humidity Ranges

6-4. Temperature and Humidity Ranges

● **The following table indicates the temperature and humidity ranges within which the air conditioner can be used.**

If the air conditioner is used at...	Then...
High temperatures	The automatic protection feature may be triggered and the air conditioner stopped.
Low temperatures	A water leakage or some other malfunction may happen if the heat exchanger freezes.
High humidity levels	Water may condense on and drip from the surface of the indoor unit if it is used for long periods.

Mode	Outdoor Temperature	Indoor Temperature	Indoor Humidity
Heating	0°C to 24°C approx.	27°C or less	-
Cooling	21°C to 43°C approx	18°C to 32°C approx.	80% or less
Drying	18°C to 43°C approx.	18°C to 32°C approx.	-

✵ **If the heating operation is used at below 0°C(outdoor temperature) then, does not have a full capacity.**
If the cooling operation is used at over 33°C(indoor temperature) then, does not have a full capacity.

Diagram

7-1. Refrigerating Cycle Block Diagram

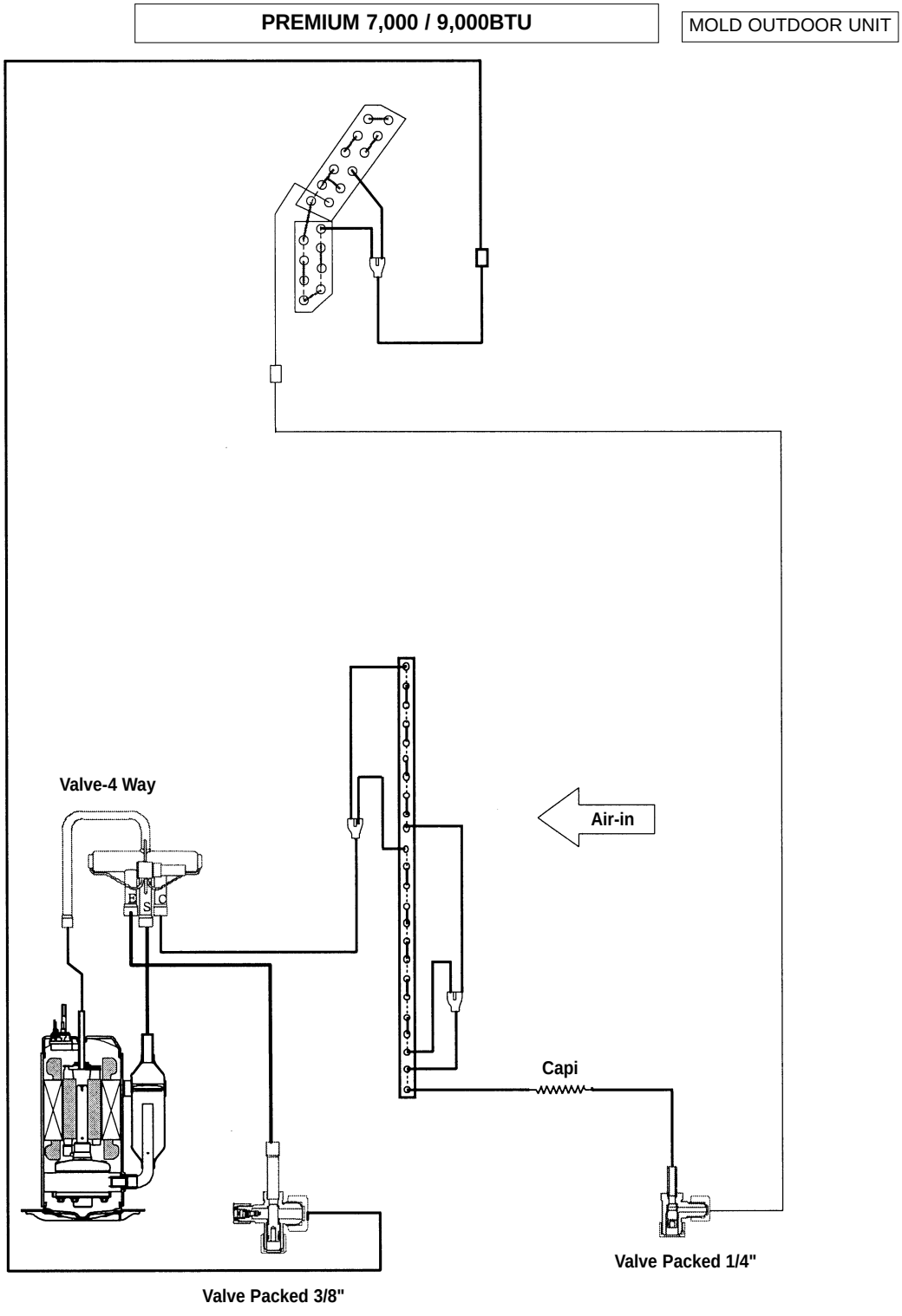
7-2. Circuit Diagram

7-3. Circuit Description

Refrigerating Cycle Block Diagram

7-1. Refrigerating Cycle Block Diagram

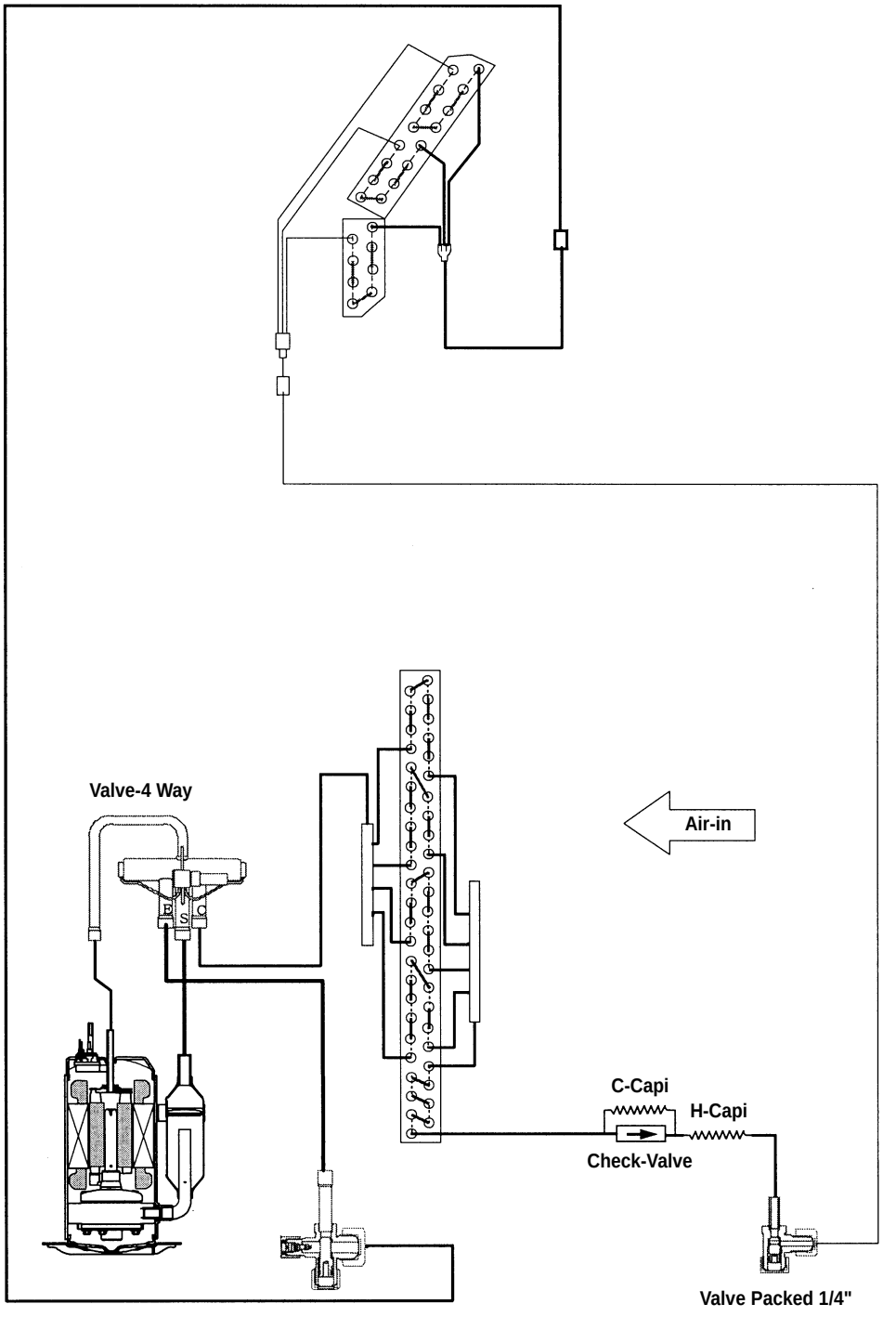
7-1-1. HEAT PUMP PREMIUM



Refrigerating Cycle Block Diagram (cont.)

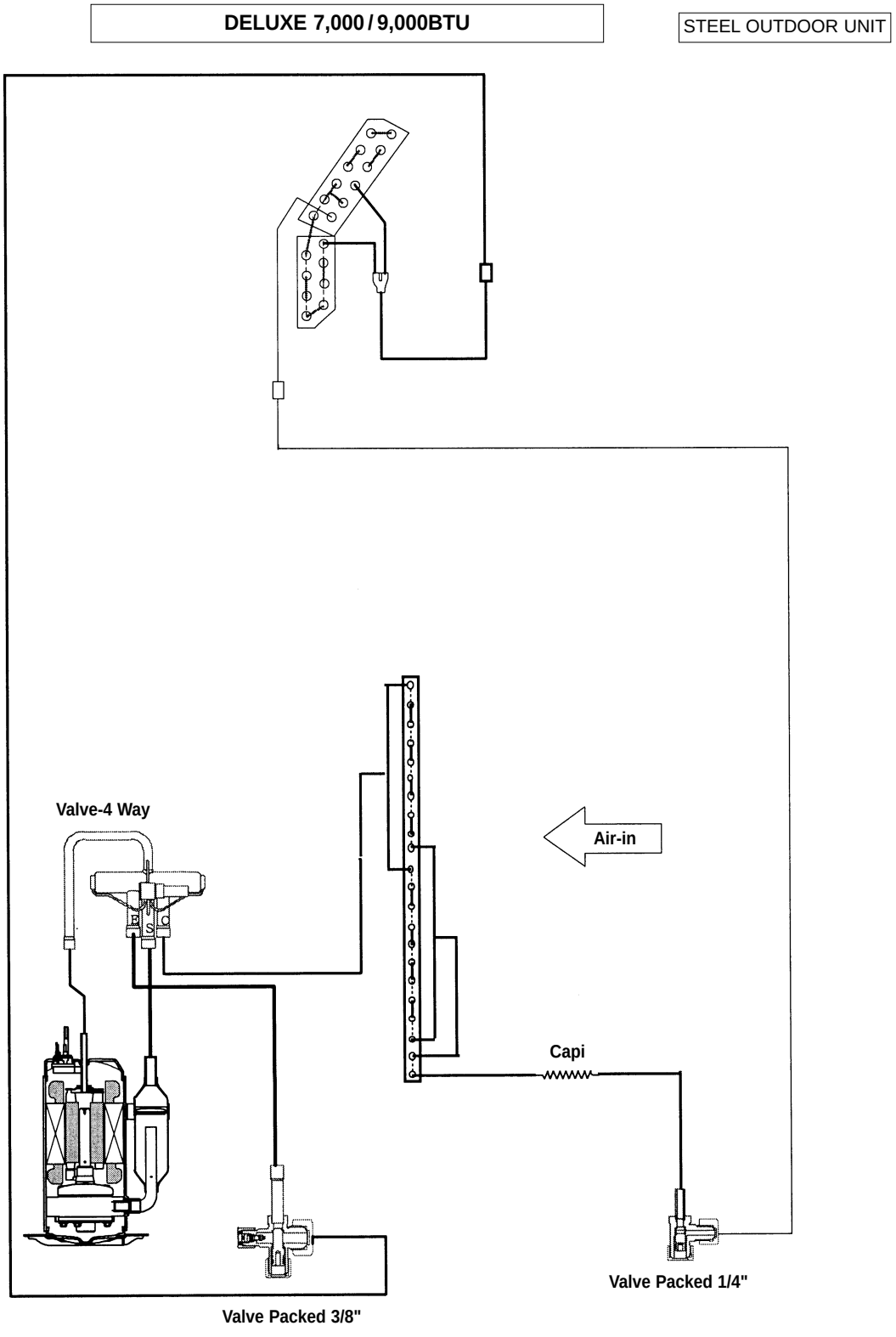
PREMIUM 12,000BTU

MOLD OUTDOOR UNIT



Refrigerating Cycle Block Diagram (cont.)

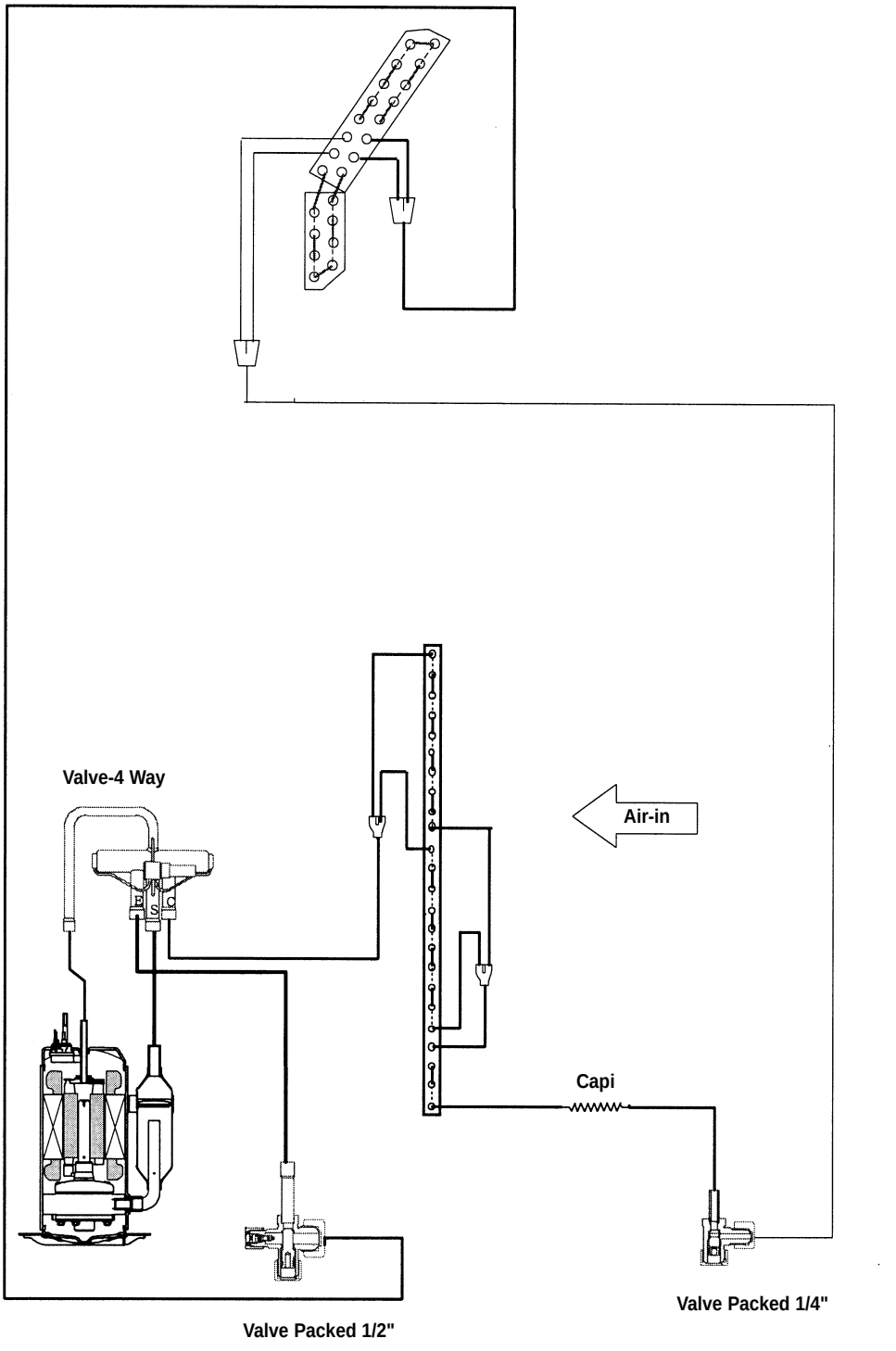
7-1-2. HEAT PUMP DELUXE



Refrigerating Cycle Block Diagram (cont.)

DELUXE 12,000BTU

STEEL OUTDOOR UNIT

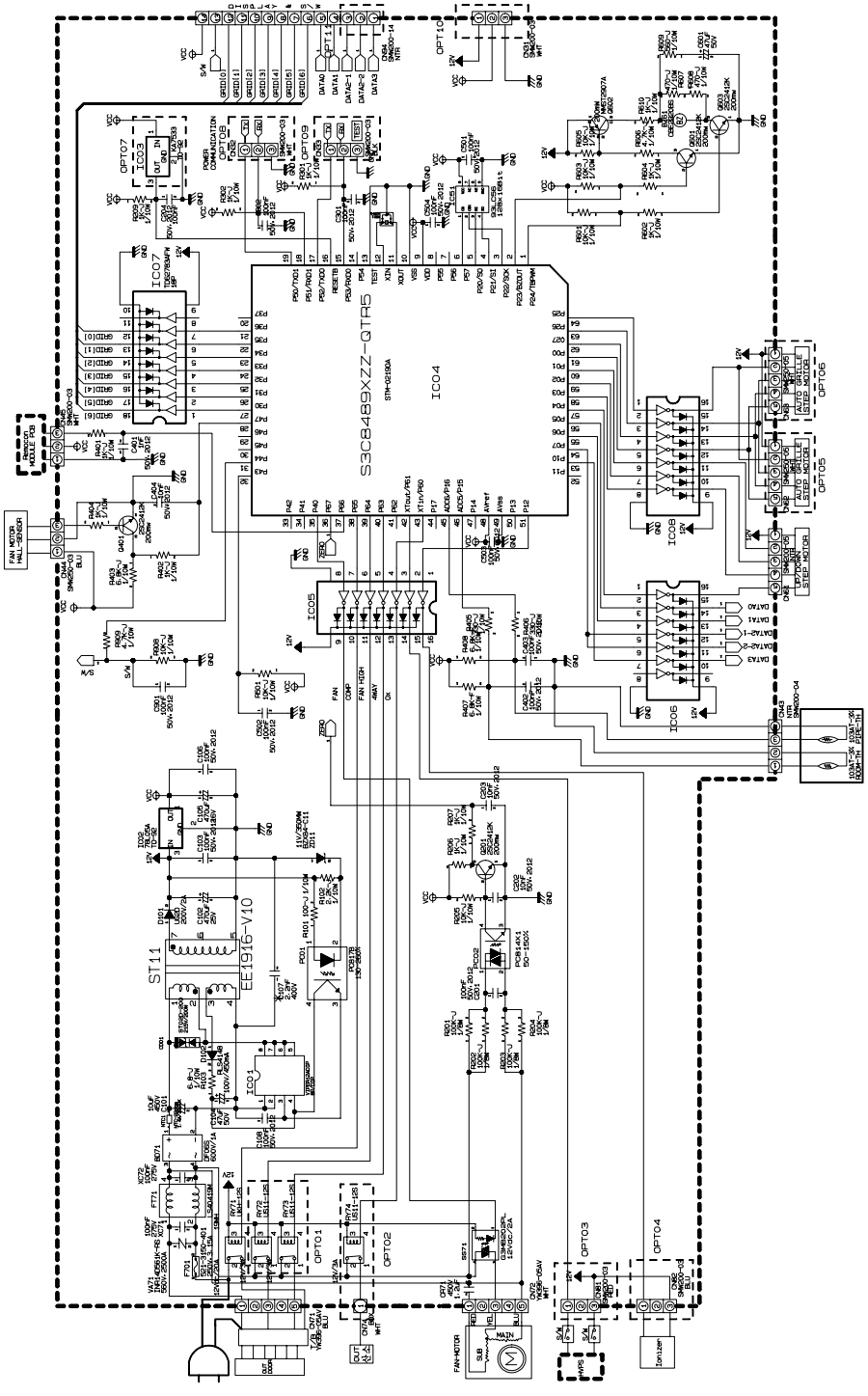


Circuit Diagram

7-2. Circuit Diagram

7-2-1. S*07APG / S*09APG / S*12APG

- **Indoor Unit (1)**



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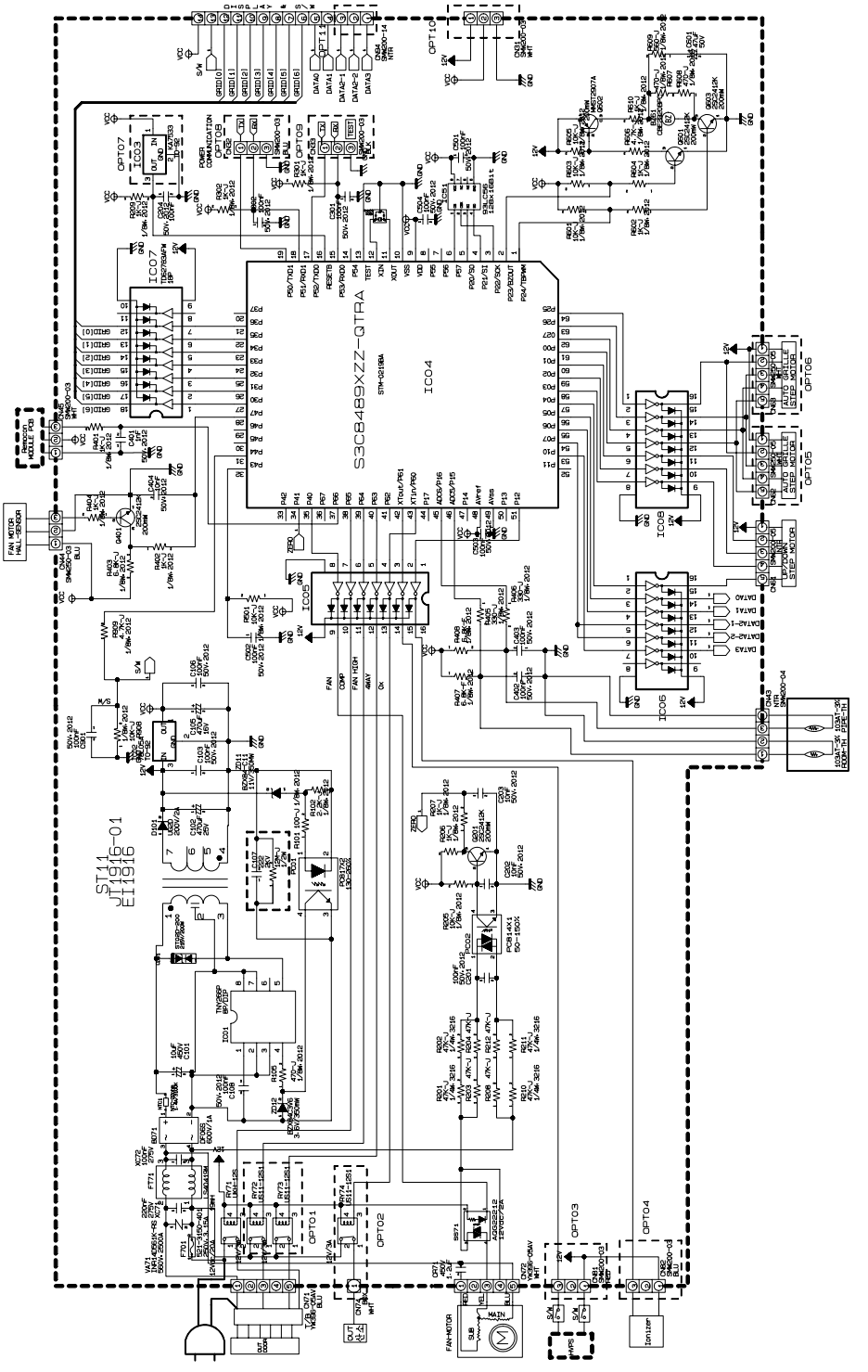
Circuit Diagram (cont.)

S*07APG / S*09APG / S*12APG(cont.)

- **Indoor Unit (2)**



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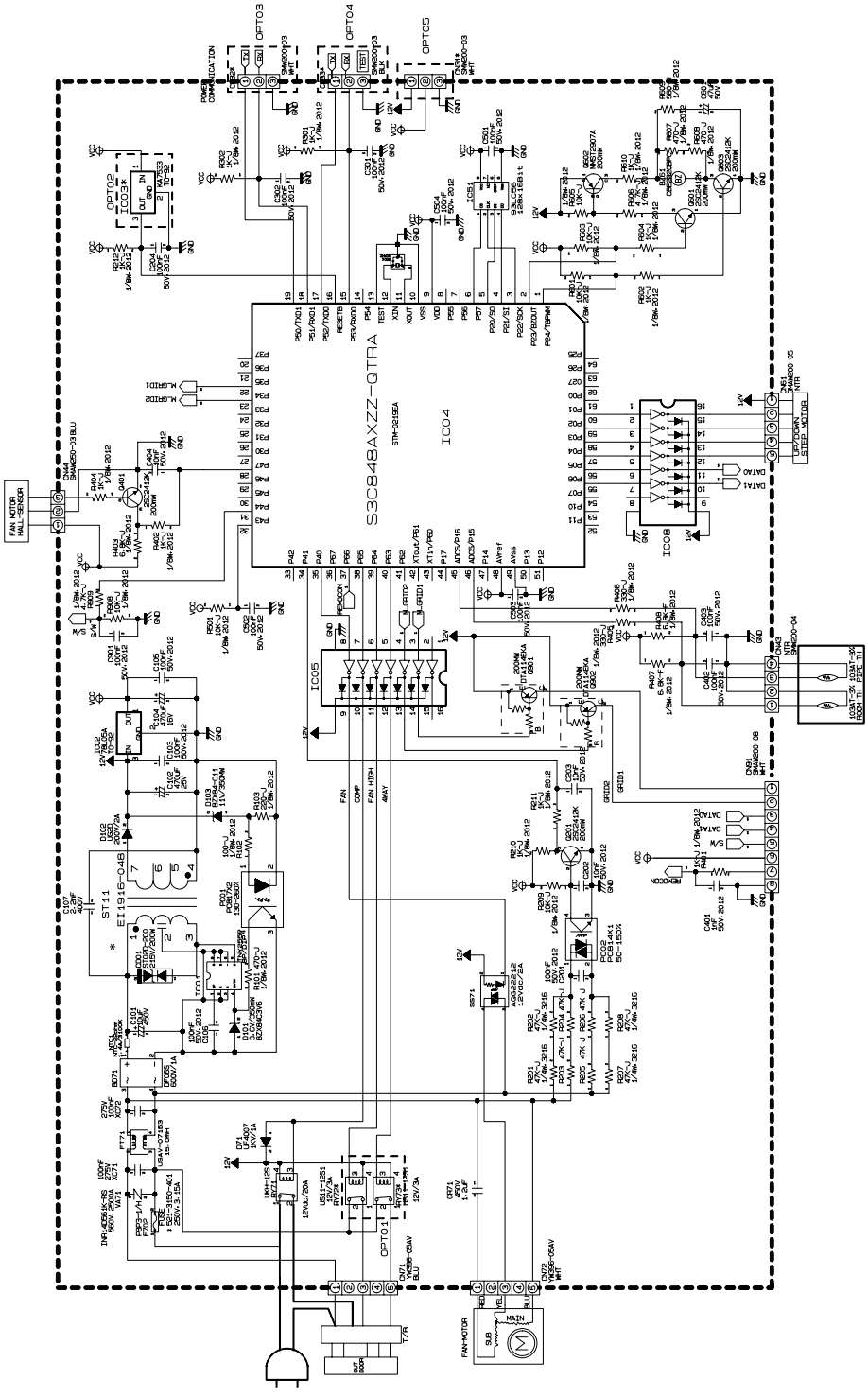
Circuit Diagram (cont.)

7-2-2. S*07AS2 / S*09AS2 / S*12AS4

- **Indoor Unit**



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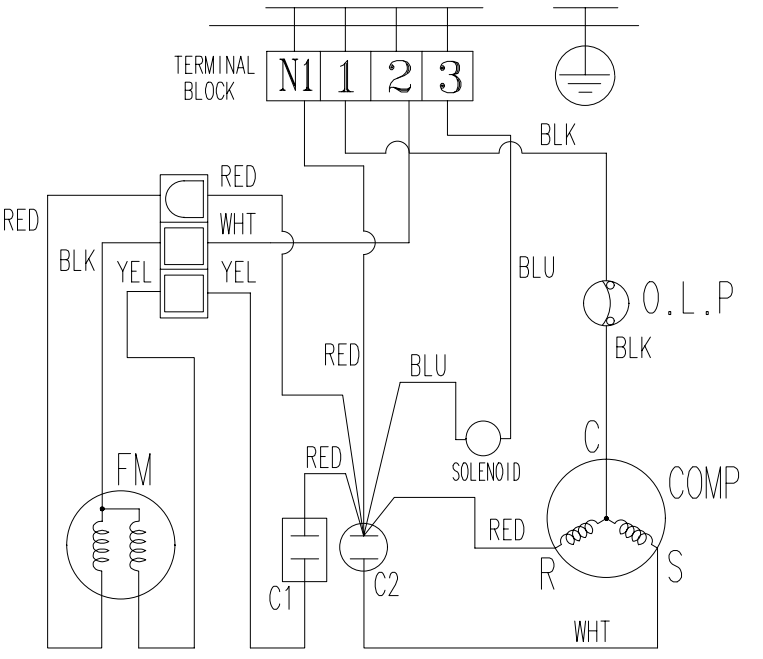
Circuit Diagram (cont.)

● **Outdoor Unit**

■ **7K / 9K / 12K**



C1	MOTOR CAPACITOR	FM	FAN MOTOR
C2	COMP CAPACITOR	O.L.P	OVER LOAD PROTECTOR

Code No : DB98-15123A

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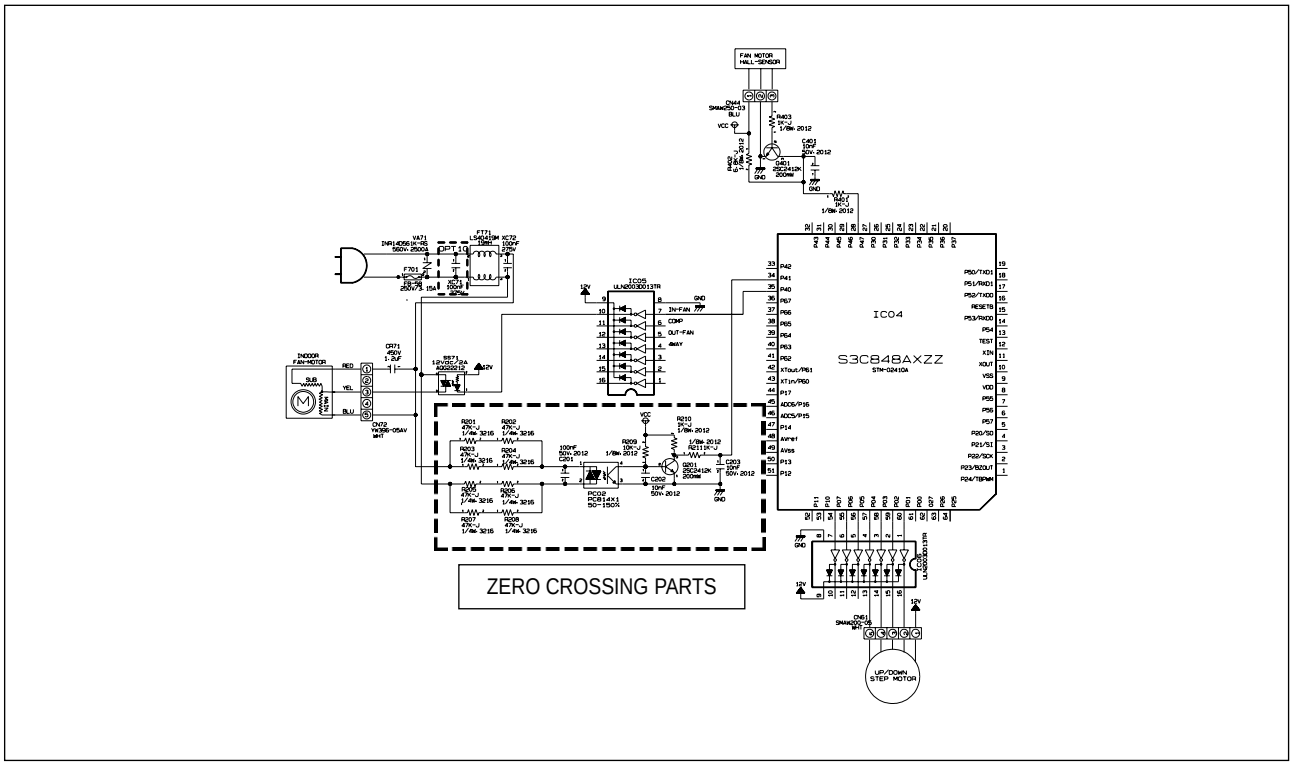
Circuit Description

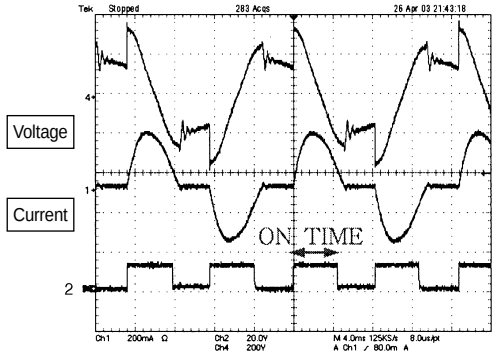
7-3. Circuit Description

7-3-1. Indoor Fan Control

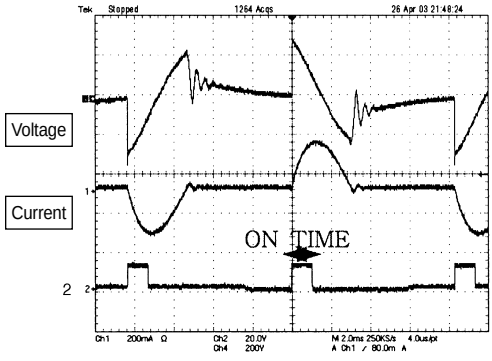


■ Use SSR(Solid State Relay) of Micom to change the ON Time until the 220V sine wave equals the fan motor rpm to control. In the meantime, the Zero Crossing part will recognize AC220V as 0V to determine the Switching Timing.
As the Fan Control Port of Micom detects the "High" signal and the signal turns into "Low" past TR-Array(UL2003), the LED of SSR obtains 12V, the same input wave with "2" and the Gate of Photo Triac obtains the operating voltage at the same time to determine the time to turn on SSR. Now the indoor fan motor can operate at the desired rpm.

High RPM

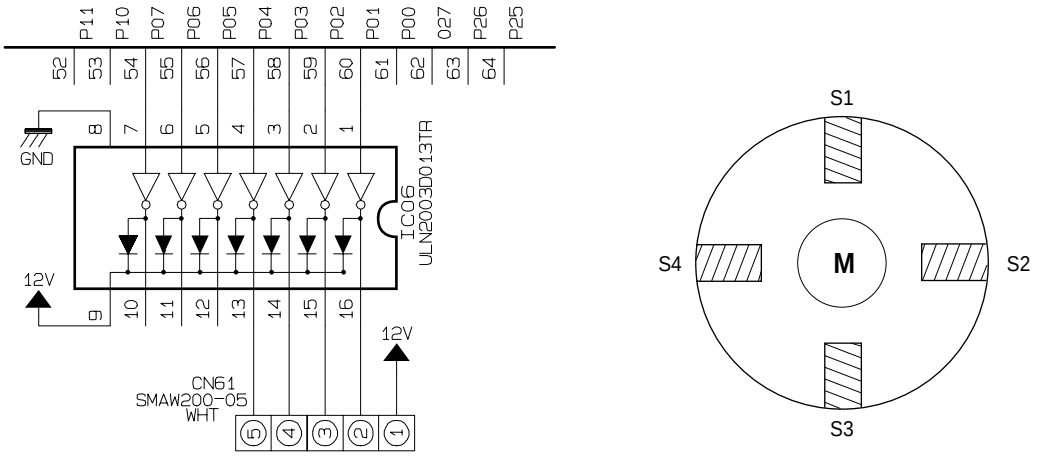


Low RPM



Circuit Description (cont.)

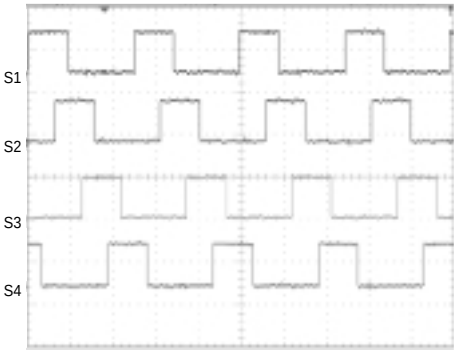
7-3-2. Stepping Motor Control



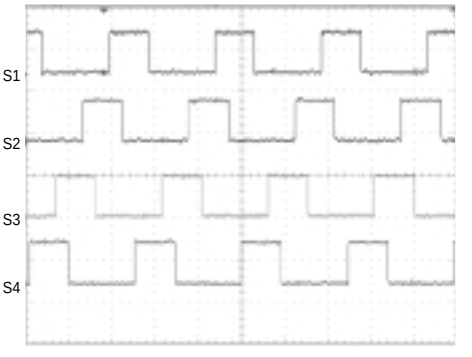
■ As shown in the above figure, let the electric currents in sequence flow through the 4 windings to revolve the stepping motor. Of 3 methods of 4 couple stepping switch sequence, 1 Phase Exciter Method, 2 Phase Exciter Method, and 1-2 Phase Exciter Method, the last method was adopted for this circuit. Based on this method, the signals come in the order of S1, S2, S3, and S4 to create magnetic force and one frequency forms a cycle. When S1, S2, S3, and S4 receive the following signals respectively, the stepping motor begins operation.

Power OFF (Closing) CCW ("1"=HIGH)								Switch	Power ON (Opening) CW ("0"=LOW)							
1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
1	1	0	0	0	0	0	0	S1	0	0	0	0	0	1	1	1
0	1	1	1	0	0	0	0	S2	0	0	0	1	1	1	0	0
0	0	0	1	1	1	0	0	S3	0	1	1	1	0	0	0	0
0	0	0	0	0	1	1	1	S4	1	1	0	0	0	0	0	0

Power OFF



Power ON



Troubleshooting

8-1. Troubleshooting for Non Inverter

8-2. Set up the Model Option

Troubleshooting for Non Inverter

8-1. Troubleshooting for Non Inverter

8-1-1. Items to be checked first

1. The input voltage should be rating voltage ±10% range.
   The airconditioner may not operate properly if the voltage is out of this range.

2. Is the link cable linking the indoor unit and the outdoor unit linked properly?
   The indoor unit and the outdoor unit shall be linked by 5 cables.
   Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables.
   Otherwise the airconditioner may not operate properly.

3. When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the airconditioner.

No	Operation of air conditioner	Explanation
1	The OPERATION indication LED(GREEN) blinks when a power plug of the indoor unit is plugged in for the first time.	It indicates power is on. The LED stops blinking if the operation ON/OFF button on the remote control unit is pushed.
2	In a COOL operation mode, the compressor does not operate at a room temperature higher than the setting temperature that the INDOOR FAN should operate. **[In case of heat pump model]** In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that indoor fan should operate.	In happens after a delay of 3 minutes when the compressor is reoperated. The same phenomenon occurs when a power is on. As a phenomenon that the compressor is reoperated after a delay of 3 minutes, the indoor fan is adjusted automatically with reference to a temperature of the air blew.
3	Fan speed setting is not allowed in DRY( ) mode.	The speed of the indoor fan is set to LL in DRY mode. Fan speed is selected automatically in AUTO mode.
4	Compressor stops operation intermittently in DRY( ) mode.	Compressor operation is controlled automatically in DRY mode depending on the room temperature and humidity.
5	Timer LED(GREEN) of the indoor unit lights up and the air conditioner does not operate.	Timer is being activated and the unit is in ready mode. The unit operates normally if the timer operation is cancelled.
6	The compressor stops intermittently in a COOL mode or DRY mode, and fan speed of the indoor unit decreases.	The compressor stops intermittently or the fan speed of the indoor unit decreases to prevent inside/outside air frozen depending on the inside/outside air temperature.
7	**[In case of heat pump model]** Compressor of the outdoor unit is operating although it is turned off in a HEAT mode.	When the unit is turned off while de-ice is activated, the compressor continues operation for up to 9 minutes (maximum) until the deice is completed.
8	**[In case of heat pump model]** The compressor and indoor fan stop intermittently in HEAT mode.	The compressor and indoor fan stop intermittently if room temperature exceeds a setting temperature in order to protect the compressor from overheated air in a HEAT mode.
9	**[In case of heat pump model]** Indoor fan and outdoor fan stop operation intermittently in a HEAT mode.	The compressor operates in a reverse cycle to remove exterior ice in a HEAT mode, and indoor fan and outdoor fan do not operate intermittently for within 20% of the total heater operation

Troubleshooting for Non Inverter (cont.)

Items to be checked first(cont.)

4. Indoor unit observes operation condition of the air conditioner, and displays self diagnosis details on the display panel.

Error Mode	LAMP		
	OPERATION	TIMER	TURBO
	≋	◷	TURBO
Indoor unit room temperature sensor error (open or short)	○	◑	○
Indoor unit heat exchanger temperature sensor error (open or short)	◑	◑	○
Indoor fan motor malfunction	◑	○	◑
EEPROM error	○	◑	◑
Option error (option wasn't set up or option data error)	◑	◑	◑

○ : Lamp off ◑ : Lamp flickering

5. Operation with abnormal motion

No	Abnormal condition	Inspection		Initial Diagnosis
1	No response from the remote control operation signal.	• Plug out and plug in 5 seconds later.	Able to operate the remote control.	OK
			Unable to operate the remote control.	Press the ⏻ (ON/OFF) button in the indoor unit. • If it operates, the remote control and indoor unit receiver are in trouble. • If not, the indoor unit is in trouble.
2	Unable to operate the outdoor unit	• Press the TURBO button with the remote control. • In 3 minutes, check the voltage between the indoor unit terminal block N(1) and 1.	AC198V ~ AC242V	Problem with the outdoor unit or PCB
			No power source displayed.	Problem with the relay (RY71) or PCB

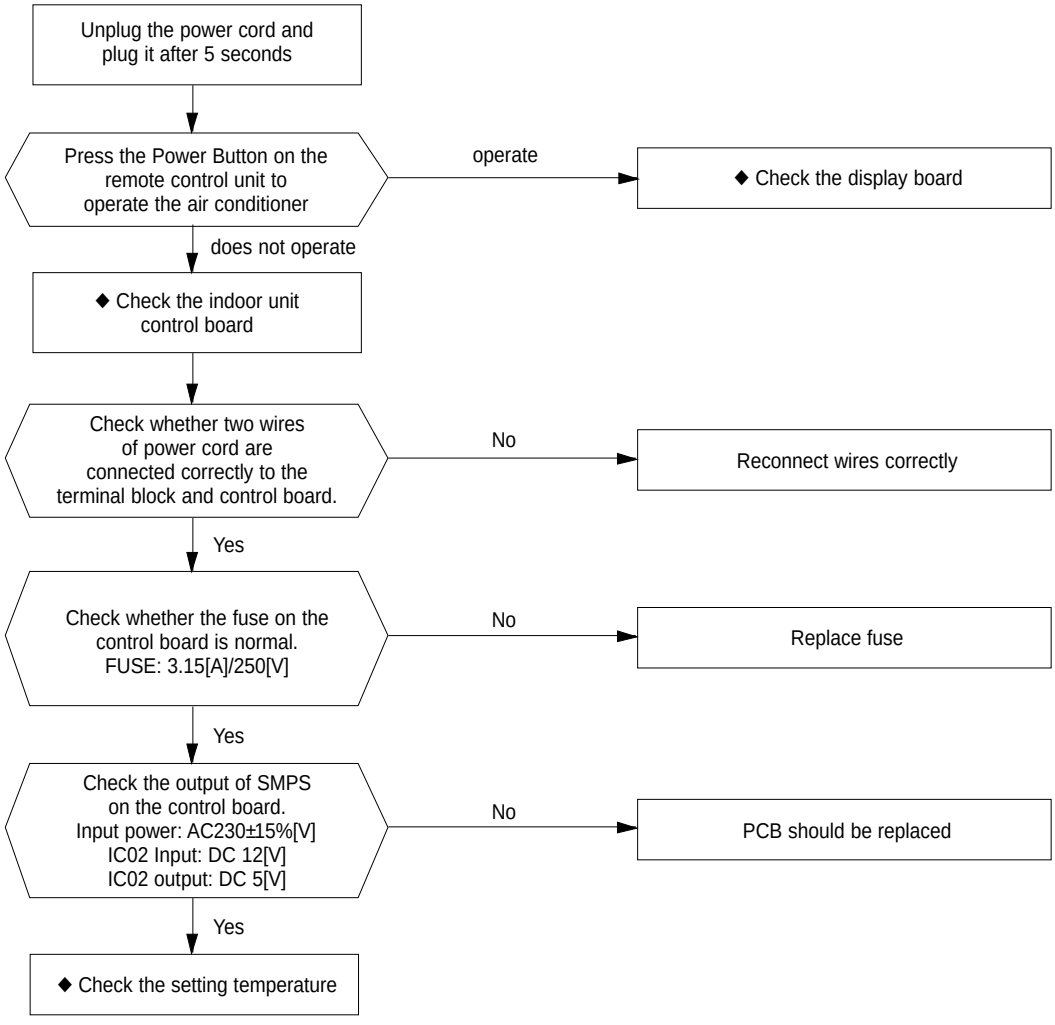
Troubleshooting for Non Inverter (cont.)

8-1-2. Fault Diagnosis by Symptom

■ No Power (completely dead)-Initial diagnosis

1. Checklist :
   1) Is input voltage normal?
   2) Is AC power linked correctly?
   3) Is input voltage of DC regulator IC KA7805 (IC02) normal? (11VDC-12.5VDC)
   4) Is output voltage of DC regulator IC KA7805 (IC02) normal? (4.5VDC-5.5VDC)

2. Troubleshooting procedure

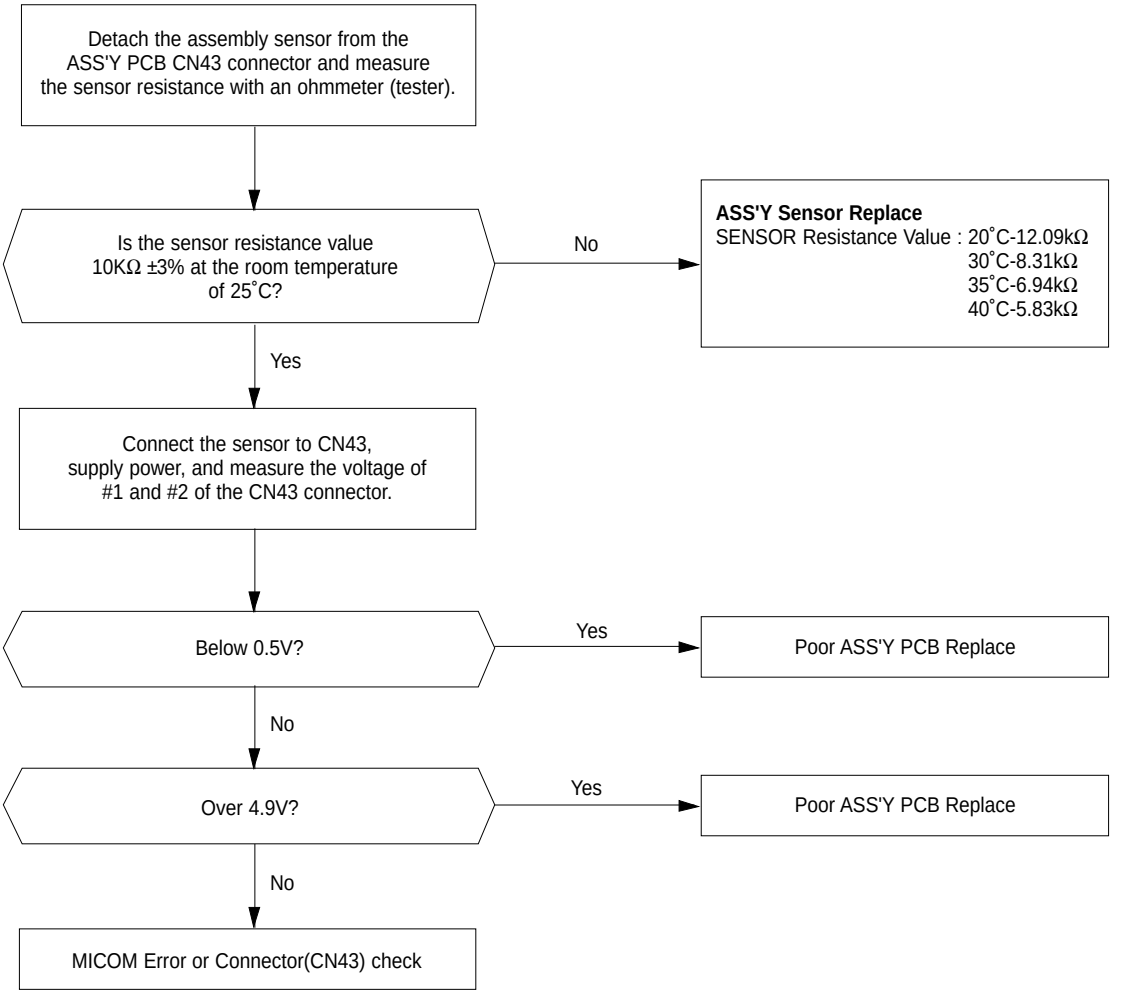

Unplug the power cord and plug it after 5 seconds
Press the Power Button on the remote control unit to operate the air conditioner
operate
◆ Check the display board
does not operate
◆ Check the indoor unit control board
Check whether two wires of power cord are connected correctly to the terminal block and control board.
No
Reconnect wires correctly
Yes
Check whether the fuse on the control board is normal. FUSE: 3.15[A]/250[V]
No
Replace fuse
Yes
Check the output of SMPS on the control board. Input power: AC230±15%[V] IC02 Input: DC 12[V] IC02 output: DC 5[V]
No
PCB should be replaced
Yes
◆ Check the setting temperature

Troubleshooting for Non Inverter (cont.)

■ **Room temperature sensor failure**

Description	LAMP			7-segment Display
	OPERATION	TIMER	TURBO	
Indoor unit room temperature sensor error(open or short)	○	◑	○	E 1

○ : Lamp off ◑ : Lamp flickering


Detach the assembly sensor from the ASS'Y PCB CN43 connector and measure the sensor resistance with an ohmmeter (tester).
Is the sensor resistance value 10KΩ ±3% at the room temperature of 25˚C?
No
ASS'Y Sensor Replace
SENSOR Resistance Value : 20˚C-12.09kΩ
30˚C-8.31kΩ
35˚C-6.94kΩ
40˚C-5.83kΩ
Yes
Connect the sensor to CN43, supply power, and measure the voltage of #1 and #2 of the CN43 connector.
Below 0.5V?
Yes
Poor ASS'Y PCB Replace
No
Over 4.9V?
Yes
Poor ASS'Y PCB Replace
No
MICOM Error or Connector(CN43) check

Troubleshooting for Non Inverter (cont.)

■ **Room Pipe sensor failure**

Description	LAMP			7-segment Display
	OPERATION	TIMER	TURBO	
Indoor unit heat exchanger temperature sensor error (open or short)	◑	◑	○	E2

○ : Lamp off ◑ : Lamp flickering

1. Check the assembly condition of the sensor connector(CN43) on the indoor unit Main PCB and if not assembled, reassemble the connector accurately.

2. Detach the room pipe sensor connector(CN43) and check the resistance between connector 3 and 4.

Temperature(˚C)	Resistance Value(Kohm)	Temperature(˚C)	Resistance Value(Kohm)	Others
15	14.68	30	8.31	The data tolerance is ±3%.
20	12.09	35	6.94	
25	10	40	5.83	

If the above data is not met, replace the room pipe sensor.

3. Assemble the room pipe sensor to PCB, plug in, and check the voltage of connector 3 and 4. If the resistance is below 0.5V or over 4.9V, replace the indoor Main PCB. (short or disconnected in the PCB board)

Troubleshooting for Non Inverter (cont.)

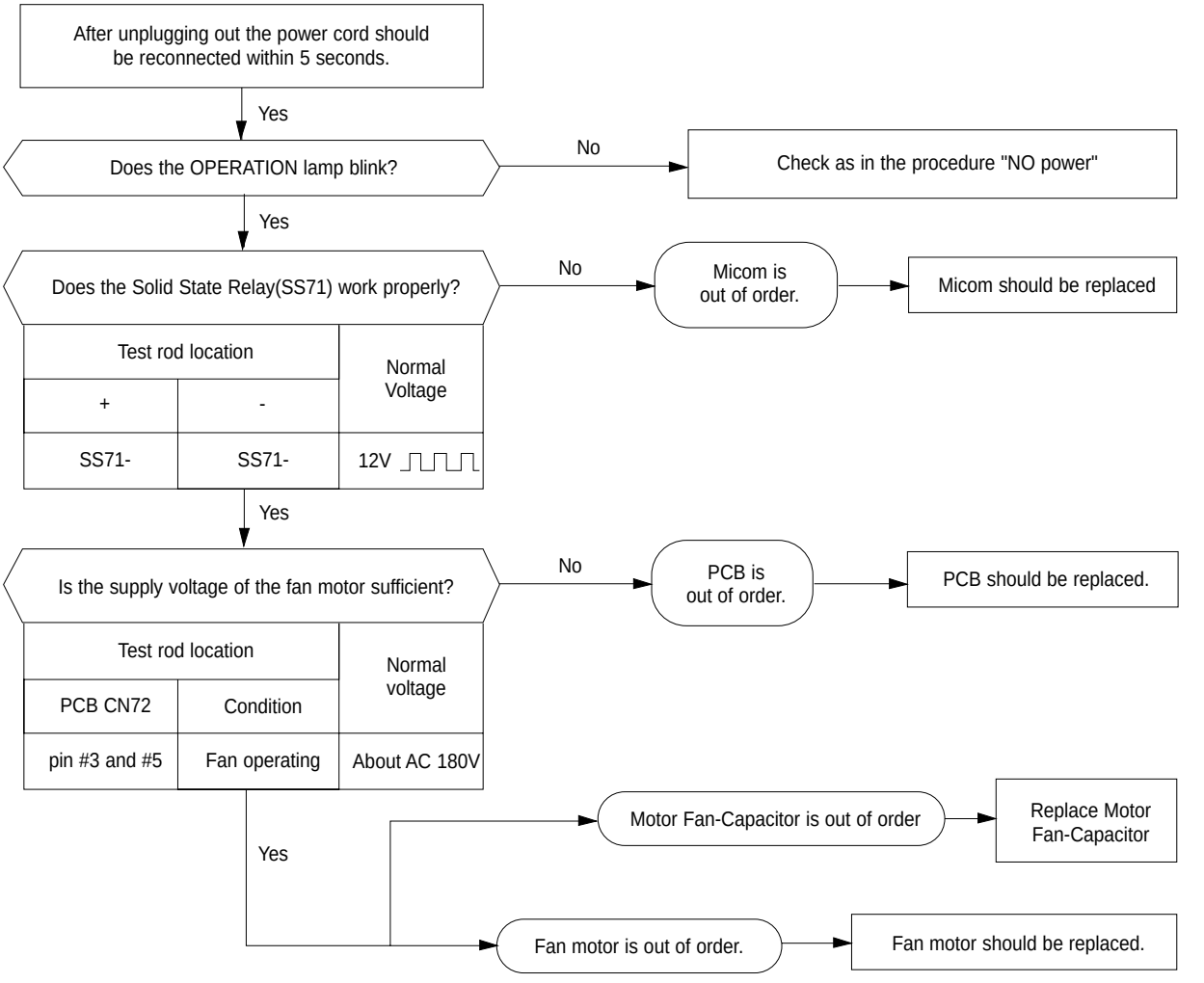
■ When the Indoor Unit Fan Does Not Operate. (Initial Diagnosis)

Description	LAMP			7-segment Display
	OPERATION	TIMER	TURBO	
	≋	◷	TURBO	
Indoor fan motor malfunction	◑	○	◑	E3

○ : Lamp off ◑ : Lamp flickering

1. Checklist :
   1) Is the indoor unit fan motor properly connected with the connector (CN72)?
   2) Is the AC voltage correct?
   3) Is HALL IC in indoor fan motor properly connected with the connector (CN44)?
   4) Is the running capacitor (CR71) properly connected with PCB board?

2. Troubleshooting procedure

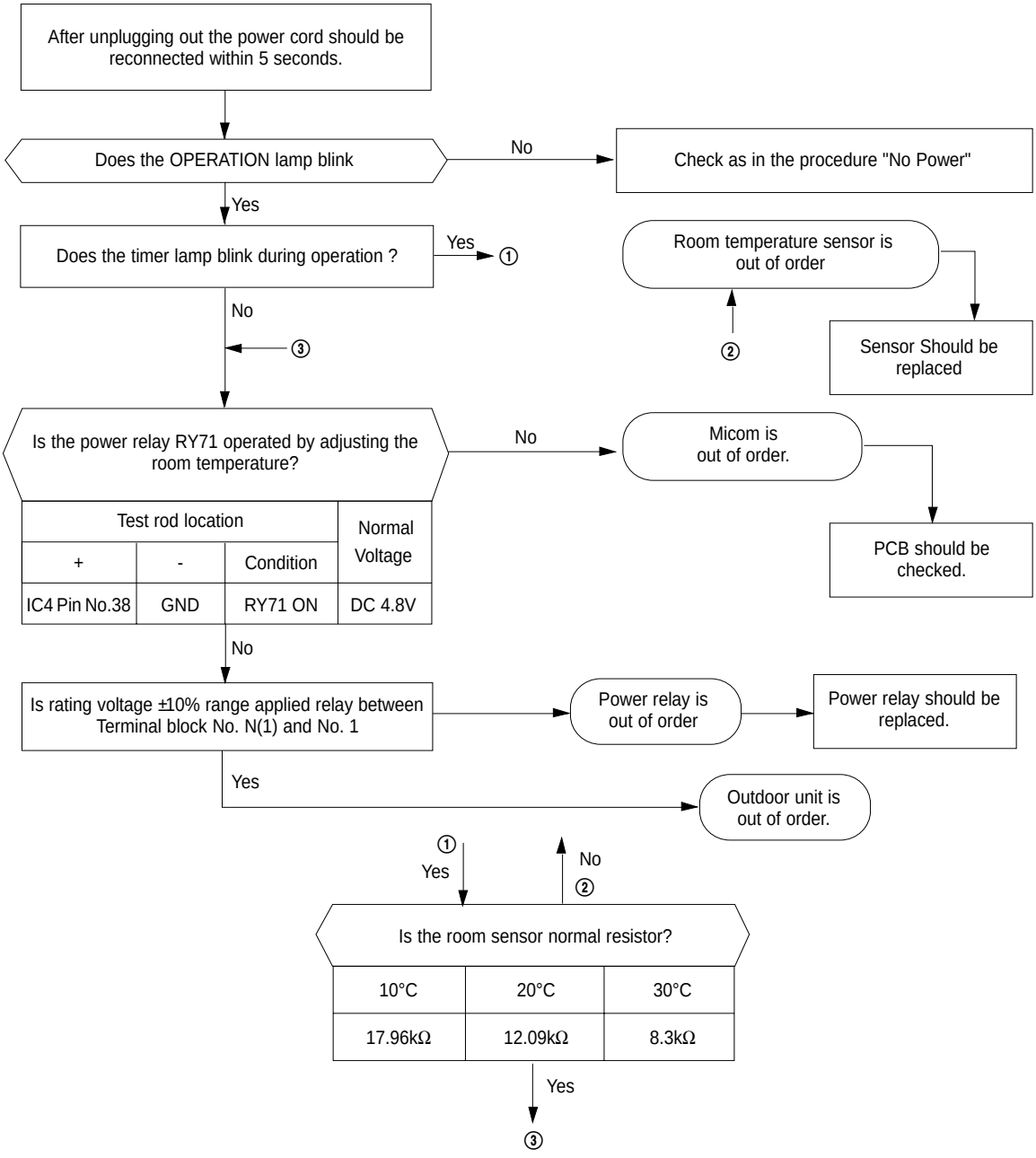


Troubleshooting for Non Inverter (cont.)

■ When the Outdoor Unit Does Not Operate. (Initial Diagnosis)

1. Checklist :
   1) Is input voltage normal?
   2) Is the set temperature of the remote control higher than room temperature in COOL mode?
   3) Is the set temperature of the remote control lower than room temperature in HEAT mode?
   4) Is the POWER IN connector (CN71) linked correctly?
   5) Is the outdoor unit properly connected with the TERMINAL BLOCK connector(N(1), 1, 2, 3)?

2. Troubleshooting procedure

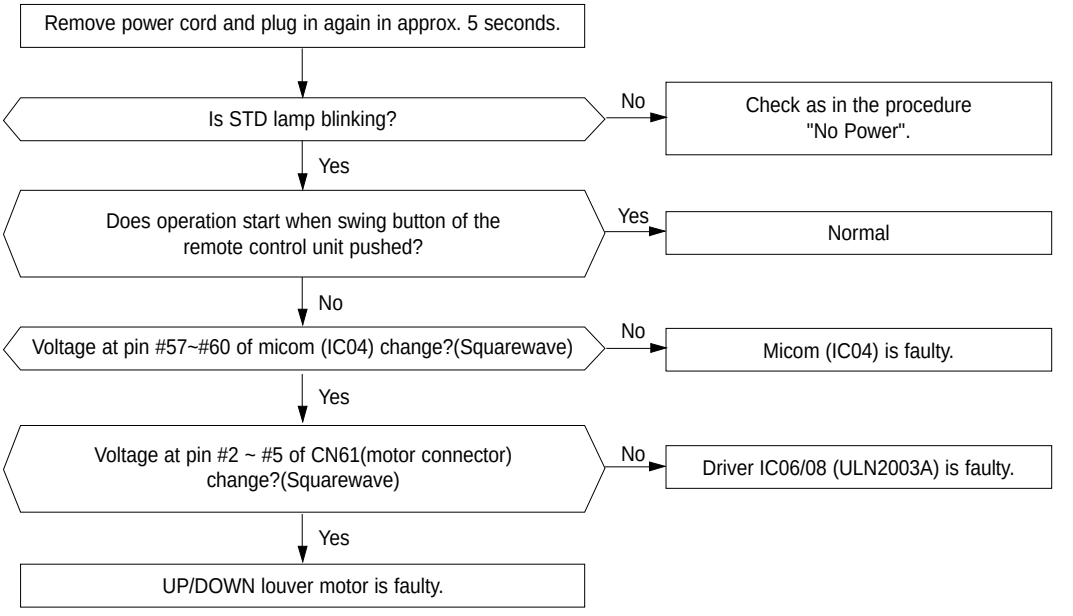


Troubleshooting for Non Inverter (cont.)

■ When the UP/DOWN Louver Motor Does Not Operate. (Initial Diagnosis)

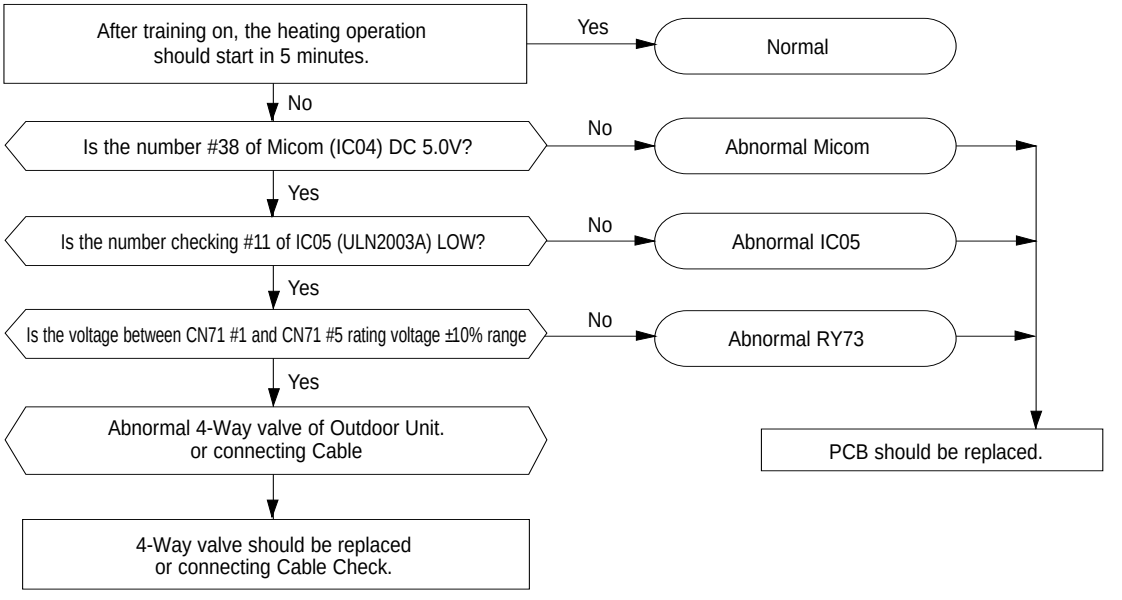
1. Checklist :
   1) Is input voltage normal?
   2) Is the UP/DOWN louver motor properly connected with the connector (CN61)?

2. Troubleshooting procedure


Remove power cord and plug in again in approx. 5 seconds.
Is STD lamp blinking?
No
Check as in the procedure "No Power".
Yes
Does operation start when swing button of the remote control unit pushed?
Yes
Normal
No
Voltage at pin #57~#60 of micom (IC04) change?(Squarewave)
No
Micom (IC04) is faulty.
Yes
Voltage at pin #2 ~ #5 of CN61(motor connector) change?(Squarewave)
No
Driver IC06/08 (ULN2003A) is faulty.
Yes
UP/DOWN louver motor is faulty.

■ In the HEAT mode, When there is no warm air current. Check this fist;

(1) Is the set temperature of Remote Control lower than room temperature in Heat mode?
(2) Is the Indoor PCB properly connected with the CN71 connector?


After training on, the heating operation should start in 5 minutes.
Yes
Normal
No
Is the number #38 of Micom (IC04) DC 5.0V?
No
Abnormal Micom
Yes
Is the number checking #11 of IC05 (ULN2003A) LOW?
No
Abnormal IC05
Yes
Is the voltage between CN71 #1 and CN71 #5 rating voltage ±10% range
No
Abnormal RY73
Yes
Abnormal 4-Way valve of Outdoor Unit. or connecting Cable
PCB should be replaced.
4-Way valve should be replaced or connecting Cable Check.

Troubleshooting for Non Inverter (cont.)

■ When the remote control is not receiving

1. Check if the connector was normally assembled.

2. Put the set in operation and check the voltage of No. 3(+) and No. 2(-) of the main PCB CN91 while operating the remote control. When the voltage descends below 3V, the assembly module PCB is normal and the main PCB is poor. Then replace the main PCB.

3. Replace the assembly display PCB because the module PCB is poor if the voltage between No. 2~3 of CN91 maintains 5V after the remote control starts operation.

Set up the model Option

8-2. Set up the Model Option

8-2-1. S✳07APG / S✳09APG / S✳12APG

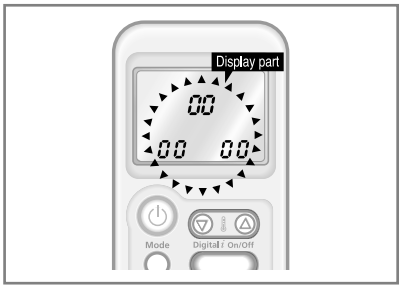
ex) Option No. : 066064- 170373

Step 1 : **Enter the Option Setup mode.**

1st Take out the batteries of remote control.

2nd Press the temperature (▽ / △) button simultaneously and insert the battery again.

3rd Make sure the remocon display shown as 00 00 00.



Step 2 : **Enter the Option Setup mode and select your option according to the following procedure.**

✳ Setting is not required if you must 0 a value which has a 0 default.

1

The default value is 00 00 00.
Otherwise, push the Mode button to 0.
Every time you push the button, the display panel reads 1 or 0 repeatedly.

2

Push the △ button to set the display panel to 6.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

3

Push the ▽ button to set the display panel to 6.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

4

Push the button to set the display panel to 0.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

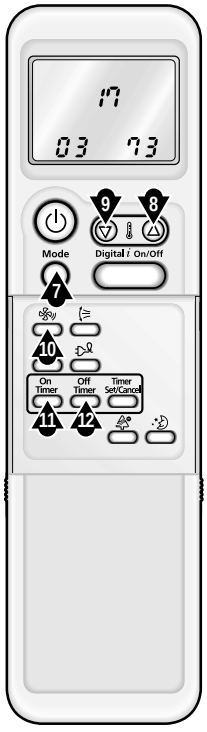
5

Push the On Timer button to set the display panel to 6.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

6

Push the Off Timer button to set the display panel to 4.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

Set up the Model Option (cont.)



✳ Setting is not required if you must 0 a value which has a 0 default.

7 Press Mode button, then the default value is 00 10 00 .

8 Push the ▲ button to set the display panel to 7.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

9 Push the ▼ button to set the display panel to 0.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

10 Push the button to set the display panel to 3.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

11 Push the On Timer button to set the display panel to 7.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

12 Push the Off Timer button to set the display panel to 3.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

Step 3 : Upon completion of the selection, check you made right selections.

Press the Mode Selection key, Mode to set the display part to 0 and check the display part.

➡ The display part shows 60 06 64 .

Press the Mode Selection key, Mode to set the display part to 1 and check the display part.

➡ The display part shows 03 17 73 .

Step 4 : Pressing the ON/OFF button (⏻)

When pressing the operation ON/OFF key with the direction of remote controller for unit, the sound "Ding" or "Diriring" is heard and the OPERATION ICON(≋) lamp of the display is flickering at the same time, then the input of option is completed. (If the diriring sound isn't heard, try again pressing the ON/OFF button.)

Step 5 : Unit operation test-run

First, Remove the battery from the remote controller.

Second, Re-insert the battery into the remote controller.

Third, Press ON/OFF key with the direction of remote controller for set.

• Error Mode

1st If all lamps of indoor unit are flickering, Plug out, plug in again and press ON/OFF key to retry.

2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for its model.

Set up the Model Option (cont.)

8-2-2. S✳07AS2/S✳09AS2/S✳12AS4

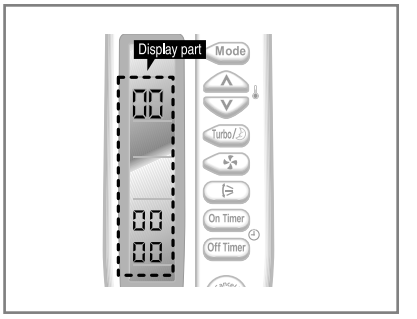
ex) Option No. : 067024-17A362

Step 1 : **Enter the Option Setup mode.**

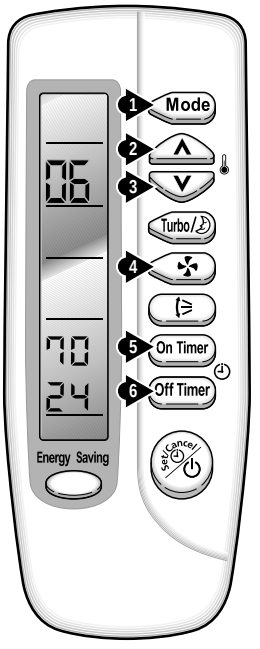
1st Take out the batteries of remote control.

2nd Press the temperature button simultaneously and insert the battery again.

3rd Make sure the remocon display shown as 00 00 00 .



Step 2 : **Enter the Option Setup mode and select your option according to the following procedure.**



✳ Setting is not required if you must 0 a value which has a 0 default.

1 The default value is 00 00 00 .
Otherwise, push the Mode button to 0 .
Every time you push the button, the display panel reads 1 or 0 repeatedly.

2 Push the button to set the display panel to 6 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

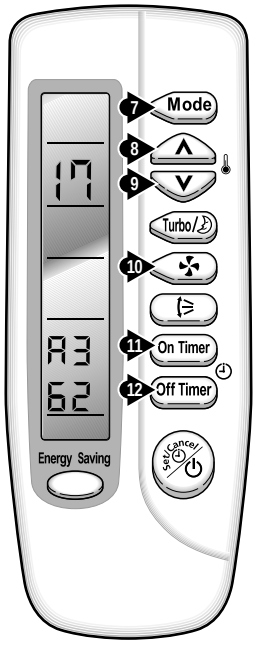
3 Push the button to set the display panel to 7 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

4 Push the button to set the display panel to 0 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

5 Push the On Timer button to set the display panel to 2 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

6 Push the Off Timer button to set the display panel to 4 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

Set up the Model Option (cont.)



* Setting is not required if you must a value which has a 0 default.

7 Press Mode button, then the default value is 00 .

8 Push the ∧ button to set the display panel to 7 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

9 Push the ∨ button to set the display panel to A .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

10 Push the button to set the display panel to 3 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

11 Push the On Timer button to set the display panel to 6 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

12 Push the Off Timer button to set the display panel to 2 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

Step 3 : Upon completion of the selection, check you made right selections.

Press the Mode Selection key, Mode to set the display part to 0 and check the display part.

➡ The display part shows 06 / 78 / 24 .

Press the Mode Selection key, Mode to set the display part to 1 and check the display part.

➡ The display part shows 17 / 83 / 62 .

Step 4 : Pressing the ON/OFF button ( )

When pressing the operation ON/OFF key with the direction of remote controller for unit, the sound "Ding" or "Diriring" is heard and the OPERATION ICON( ) lamp of the display is flickering at the same time, then the input of option is completed. (If the diriring sound isn't heard, try again pressing the ON/OFF button.)

Step 5 : Unit operation test-run

First, Remove the battery from the remote controller.

Second, Re-insert the battery into the remote controller.

Third, Press ON/OFF key with the direction of remote controller for set.

• Error Mode

1st If all lamps of indoor unit are flickering, Plug out, plug in again and press ON/OFF key to retry.

2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for its model.

Set up the Model Option (cont.)

■ OPTION ITEMS

REMOCON / MODEL	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
SH07APG	0	2	6	0	6	4	1	7	0	2	2	E
SH09APG	0	2	6	5	6	5	1	7	0	3	5	1
SH12APG	0	6	7	0	6	4	1	7	0	3	6	2
SH07AS2	0	2	6	0	6	5	1	7	A	0	F	b
SH09AS2	0	2	6	0	6	5	1	7	A	2	2	E
SH12AS4	0	6	8	0	2	4	1	7	A	3	5	1

MEMO

MEMO

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